BOARD STRUCTURE, OWNERSHIP CONCENTRATION AND CORPORATE PERFORMANCE: ITALIAN EVIDENCE

Vincenzo Scafarto [*], Federica Ricci [**], Gaetano Della Corte [***], Pasquale De Luca [****]

* *Corresponding author*, University of Cassino and Southern Lazio, Italy
Contact details: Department of Human, Social and Health Sciences, University of Cassino and Southern Lazio, Via S. Angelo in Theodice, Campus Folcara, 03043 Cassino, Italy
** Department of Law and Economics of Production Actvities, University of Rome "La Sapienza", Italy
*** Department of Business and Economic Studies, Parthenope University, Neaples, Italy
**** Department of Law and Economics of Production Activities, University of Rome "La Sapienza", Italy

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Abstract

This paper investigates the interplay between board-level governance characteristics, ownership concentration and firm performance in the Italian corporate landscape, which is characterized by high (though varying) degrees of ownership concentration. The empirical setting of this study is the Italian stock market and specifically a sample of non-financial firms included in FTSE MIB and mid-cap index of Milan stock exchange, spanning a five-year time period from 2011 up to 2015. We regressed an accounting proxy for firm performance, namely the return-on-asset (ROA) ratio, on several board-level governance variables and specifically board size, board independence, CEO-chairman duality and audit committee (ACD) full independence. In doing so, we also controlled for the impact of different levels of ownership concentration by partitioning the sample into firms with lower and-higher-than-median values of ownership concentration (OC). The empirical results indicate that board characteristics differently impact performance in firms with lower levels of OC compared to firms with higher OC. Specifically, in lower-OC firms, board independence and AC full independence have a negative impact, whereas CEO duality (either alone or interacted with board independence) has a positive impact on performance. Conversely, higher-OC firms benefit from a large board size and are negatively affected by AC independence, while the remaining variables are not significant. The key insight to be gained from our evidence is that the individual and interaction effects of board-level mechanisms may be contingent on the presence of other governance mechanisms (in this instance, the degree of ownership concentration). As such, this research adds to the existing literature questioning the 'one-size-fits-all' approach to corporate boards. In terms of practical implications, our findings support the notion that firms might consider the potential interaction and substitution effects between governance mechanisms and structure boards accordingly.

Keywords: Board Structure, Ownership Concentration, Firm Performance, Board Independence, Audit Committee Independence

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1. INTRODUCTION

The linkage between corporate board structure and firm performance has been extensively researched over recent decades (e.g.: Arora and Sharma, 2016; Ben Barka and Legendre, 2016; Darko *et al.,* 2016; Malik and Makhdoom, 2016; Pérez-Calero *et al.,* 2016; Mishra and Kapil, 2017). Much scholarly research has relied on three main theories to predict the performance impact of different board characteristics, namely agency theory, stewardship theory and resource dependency theory.

Agency theory is indeed the most influential theoretical perspective in corporate governance research. Under its tenets, the board of directors is primarily viewed as a (monitoring) mechanism to address the potential conflicts between managers and shareholders (Type I agency problem) or between controlling and minority shareholders (Type II agency problems). This, in turn, would result in superior firm performance by reducing agency costs (Fama and Jensen, 1983; Jensen and Meckling, 1976).

The prevailing agency perspective on board governance is also reflected in governance reforms implemented in different countries which consistently recommend such mechanisms as board and committees independence as well as CEO-Chairman separation as a means to foster the monitoring role of boards.

Stewardship theory provides an alternative framework which de-emphasizes the monitoring and stresses the advice-and-counsel function of board members. Under this theory, managers and directors are not self-interested agents but rather good stewards of corporate assets who strongly identify with their organizations and thus personalize organizational failure and success, which makes monitoring redundant. Accordingly, it is argued that firms with more inside directors will achieve superior performance on the grounds that insiders have a better understanding of the business processes relative to outsiders and therefore make superior decisions (Donaldson, 1990; Klein, 1998). By the same token, CEO duality is assumed to be beneficial to firm performance due to the benefits associated with a unified leadership and goal alignment.

Eventually, under the resource dependency perspective, the notion is stressed that boards have (also) the role of securing resources from the external environment especially in terms of outside linkages and networks of relationships, which in turn may benefit business development and its long-term prospects (Pfeffer and Salancik, 1978).

While much empirical work has been conducted based on these theoretical frameworks, the existing evidence is still inconclusive as research studies have provided mixed support for their predictions. Consequently, in recent years a more composite research perspective has developed which challenges the dominant perspectives on the board structure-performance relationship, suggesting that the effectiveness of particular governance mechanisms (e.g. board independence) may depend on the presence (absence) of other governance mechanisms (e.g. ownership concentration) or the contextual setting under investigation. This approach commonly referred to as Contingency theory (Pye and Camm, 2003; Giovannini, 2010; Gaur *et al.,* 2015, Terjesen *et al.,* 2016; Duru *et al.,* 2016; Rubino *et al.,* 2016; Zattoni *et al.,* 2017) argues that the limitations of many prior studies based on dominant theories lie in that they tend to prescribe a 'one-size-fits-all' approach to board composition but fail to consider the potential interaction and substitution effects between governance mechanisms (Coles *et al.,* 2001).

The present study subscribes to this view and accordingly investigates the relation between internal (board-level) governance mechanisms and firm performance controlling for the impact of different levels of ownership concentration on this association.

The empirical setting of this study is the Italian stock market and specifically a sample of non-financial firms included in FTSE MIB and mid-cap index of Milan stock exchange, which comprise firms with the highest market capitalization. The Italian corporate setting is characterized by the presence of large controlling shareholders who dominate boards through influencing the directors' nomination process as well as the board and committee agenda (Allegrini and Greco, 2013). Other hallmarks of the Italian ownership context are the widespread perception of outside directors as lacking independence from management and the weak legal protection of small investors (Di Pietra *et al.,* 2008, Allegrini and Greco, 2013).

Considering this ownership context and the resulting agency issues, we posit that different levels of ownership concentration may result in a different impact of board characteristics on firm performance. Specifically, our main variables of interest are board size, board independence, CEO duality, audit committee (AC) full independence. This latter variable appears of particular interest in the context of this study as the Italian Corporate Governance Code for listed companies centres the 'internal control system', that is the oversight of financial reporting process and risk management practices, around the activity of the audit (and risk) committee (Allegrini and Greco, 2013). Under this setting, independence is regarded as an important feature of audit committees in order to ensure the effectiveness of their monitoring role.

Based on a sample of 230 firm-year observations, the empirical analysis indicates that board characteristics differently impact performance in firms with higher levels of ownership concentration (OC) relative to firms with lower-OC levels. Our main findings are as follows: first, board independence has a negative and significant impact, whereas CEO duality (both alone and interacted with board independence) has a positive and significant impact on performance (only) in lower-OC firms; second, board size positively impacts performance in higher-OC firms; and third, the impact of AC full independence is negative and significant for both higher and lower-OC firms. Overall the results of the empirical analysis provide scant support to an agency perspective on the relation between board structure and performance, whereas they appear more in line with the arguments of stewardship and resource dependency theory.

This paper might contribute to the existing literature in the following respects. First, it provides additional evidence as to the effectiveness of certain

board properties and their impact on firm performance in a corporate setting characterized by large controlling shareholders; second and relatedly, it provides further support for the validation of a contingency model of board composition by documenting that the individual and interaction effects of board-level mechanisms may depend on other governance mechanisms at work (in this instance, the degree of ownership concentration). In terms of practical implications, our findings support the notion that firms might consider the potential interaction and substitution effects between governance mechanisms and structure boards accordingly (Coles *et al.,* 2001).

The paper is organized as follows. The next section presents a review of the literature concerning the impact of board structure and ownership concentration on corporate performance and the related hypotheses are presented. Section 3 describes the research design and the methodology. Sections 4 and 5 describe the regression analysis and present the empirical results. Section 6 discusses results and presents conclusions. Section 7 highlights limitations and avenues for further research.

2. CONCEPTUAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

The existing empirical evidence on the relation between board structure and firm performance is generally mixed and inconclusive (Dalton *et al.,* 1998; 1999; Minichilli et al. 2009).

Some studies show that there is a positive relationship between board characteristics and firm value (Anderson and Reeb, 2004; Kowalewski *et al.,* 2010; Maury 2006; Villalonga and Amit 2006; San Martin-Reyna and Duran-Encalada, 2012). However, other studies found a negative relationship between corporate governance variables and firm performance (Guest 2009; De Andreas et al. 2005; Jackling and Johl, 2009; Adams and Ferreira, 2009).

2.1. Board size

The arguments and findings regarding the impact of board size on firm performance are conflicting; with the literature concluding that a large board size can have both positive and negative effects due to greater monitoring versus more rigid decision making respectively (Harford *et al.,* 2008).

One major advantage of large boards is the greater collective information that the board possesses about factors affecting that value of firms (Haleblian and Finkelstein, 1993). Boone et al. (2007) confirm the hypothesis that large boards of directors are fully efficient in firms where a manager can adopt the fraudulent behavior, where the aim is to satisfy personal desires at the expense of shareholders. Studies by Harris and Raviv (2008), Jackling and Johl (2009), Abor and Biekpe (2007), and Kiel and Nicholson (2003) Van den Berghe and Levrau (2004), Anderson et al. (2004) and Pfeffer (1973) all found a positive relationship between board size and corporate performance.

Ehikioya (2009) found a positive relationship between board size and return on assets. Similarly, Rubino et al. (2016) found a positive relationship between firm performance (ROA) and board size in non-family Italian firms. Eventually, Sheikh et al. (2011) find a positive relationship between board size and return on assets and earnings per share.

On the counterpart, it is argued that larger boards may be more difficult to coordinate. This is arguably the reason why other research finds a negative relationship between board size and firm performance. For instance, Conyon and Peck (1998) document that board size is inversely related to firm value in a sample of firms of European countries. Similarly, Mashayekhi and Bazaz (2008), Yermack (1996) and Mak and Kusnadi (2005) found a negative association between large boards and firm value. Guest (2009) finds that board size has a strong negative impact on share return and Tobin's Q.

Generally, these researchers argue that large boards are associated with lower performance due to informational asymmetries, communication issues and slow decision-making processes (Forbes and Milliken, 1999).

Considering the conflicting arguments and results on this issue, we propose the related hypothesis in the null form:

Hp1. Board size has an impact on firm performance

2.2. Board independence

In these last few years, the academic community has focused much attention on the role of independent directors, especially in settings with concentrated ownership where an agency conflict may arise between large controlling shareholders and minority shareholders (Guiterrez *et al.,* 2012).

Again the main theoretical perspectives used to explain how independent directors may affect firm outcomes are the agency theory, resource dependence theory, and stewardship theory.

Under the agency-theory framework, independent directors have fewer potential conflicts of interest and can, therefore, provide greater integrity and offer impartial judgment on the work of managers thus reducing agency costs which in turn would prove beneficial to performance (Fama, 1980; Rosenstein and Wyatt 1997). As a matter of fact, much evidence exists that the presence of independent directors safeguards shareholders in the face of agency problems (Brickley and James, 1987; Hermalin and Weisbach, 1998; Byrd and Hickman, 1992).

A second perspective on the issue is the resource-dependence theory which attaches much importance to the role of external resources in affecting firm performance (Pfeffer and Salancik, 2003). Under this theory, the independent directors represent a human asset of immense value to the company (Donaldson and Davis, 1991), who can advise and support top managers (Minichilli *et al.,* 2009) bringing their experiences and different points of view. Furthermore, independent directors may expand their firms' boundaries through providing linkages to important external resources (Hillman and Dalziel, 2003).

Both theoretical perspectives predict a positive impact of independent directors on performance. Alternatively, under the stewardship theory managers and directors are assumed to be good

stewards of corporate assets who strongly identify with their organizations and thus personalize organizational failure and success, which makes monitoring role of independents redundant. Furthermore, it is argued that inside directors being the organizational experts are in a better position to understand the business and make value-enhancing decisions on a range of issues (e.g. R&D spending) relative to independent directors who are often part-timers to the firm in which they serve as directors and as such are not organizational experts. Consequently, they may not possess sufficient knowledge about the internal and external environment of the firm to make informed decisions and act in an advice-and-counsel function (Donaldson, 1990; Klein, 1998; Reibez, 2015).

Against this theoretical framework, the existing evidence on the linkage between board independence and performance is somewhat mixed. So for instance, Brickley et al. (1997), Krivogorsky (2006), Florackis and Ozkan (2009), Luan and Tang (2007), Kim and Lim (2010), Jackling and Johl (2009) and Pombo and Gutierrez (2011) report a positive relationship between the presence of independent directors and firm performance. Most recently, Ben Barka and Legendre (2016) document a positive association between independent directors and financial performance as measured by ROA and ROE, in a sample of large listed companies indexed in the Société des Bourses Francaises.

By contrast, Agrawal and Knoeber (1996), Bebchuk and Cohen (2005), Shan and McIver (2011), Terjesen et al. (2016) document a negative association between the percentage of independent directors and performance.

Eventually Hermalin and Weisbach (1991), Bhagat and Black (2002), Vafeas and Theodorou (1998), Klein (1998), Arosa et al. (2010) and Rubino et al. (2016) find no relation between board independence and firm performance. Moreover, contrary to agency arguments, Klein (1988) finds the proportion of insider members on the board positively associated with various performance metrics.

Considering these inconclusive and contrasting results, we propose the following hypothesis in the null form:

Hp2.The presence of Independent directors on the board has an impact on firm performance

2.3. Audit committee

The audit (and risk) committee is viewed as an important internal mechanism of governance owing to its specific role of financial oversight and control. Its primary role is to oversee the financial accounting process so as to provide relevant and credible information to company stakeholders (Karamanou and Vafeas, 2005; Sun *et al.,* 2014; Vafeas, 2005). More specifically, as far as the Italian (voluntary) regulatory framework is concerned, the audit committee is charged with the task of overseeing the accounting, financial reporting and risk management processes (Borsa Italiana, 2015). Similar to international trends, the Italian code of best practices recommends the audit committee be made of independent directors or alternatively of non-executive directors in majority independent.

Independence is often described as one of the most important attributes of audit committees (AC) based on the assumption that the level of AC independence is associated with improved monitoring of the financial reporting and risk management processes (Klein, 2002). Evidence for this argument is provided by Carcello and Neal (2000) and Kamarudin et al. (2012) who document that independent audit committees are more effective at monitoring the quality of financial statements. Furthermore, Anderson et al. (2004) find a positive association between fully independent audit committees and the cost of debt financing suggesting that active monitoring of accounting process by independent directors is quite important from a creditor perspective too.

In terms of performance impact, Chan and Li (2008) using a sample of Fortune 200 companies find a majority presence of expert-independent directors (i.e. who are top executives in other publicly traded firms) in the audit committee enhances firm value (Tobin's Q). In a similar vein, Guo et al. (2014) document a positive association between firm valuation (M/BV) and the percentage of independent and professional directors in the audit committee among East Asian firms.

However, there are also counter arguments that challenge the importance of AC independence. Contrary to the (agency) view that describes audit committees as overseers of management, hegemony theorists maintain that independent directors in the audit committee mostly act to ratify management actions. Under this view, even in fully compliant audit committees, independent directors would fail to question or act against the management (Cohen *et al.,* 2008). Indeed, empirical evidence exists that ACs fail to deter earnings management practices (Wan Mohammad *et al.,* 2016). Ben Barka and Legendre (2016) also document that a fully independent AC may be associated with lower firm performance. They explain this finding in terms of 'reverse causality', arguing that full independence of AC is achieved only when firms face financial difficulties.

Since arguments and evidence on the effects of AC independence are mixed, we propose the related hypothesis in the null form:

Hp3. A full independent AC has an impact on firm performance

2.4. CEO duality

CEO duality and its impact on performance is a highly contentious issue in both academic and business communities (Dalton *et al.,* 2007; Finkelstein *et al.,* 2009). Again, scholars make different assumptions about the performance effects of CEO duality with some relying on an agency-theory explanation while others base their arguments on stewardship and resource dependency theory.

Under the tenets of agency theory, the independence between the board and management is necessary to check managerial entrenchment (Jensen and Meckling, 1979; Fama and Jensen, 1983). Therefore, CEO duality would be detrimental to firm performance, essentially because it creates a strong individual power base, which could impair the board's ability to exercise effective control on CEOs

(Peng *et al.,* 2007). In other terms, CEO duality may constrain board independence and reduce its ability to exert an oversight and governance role (Finkelsten and D'Aveni, 1994; Millstein, 1992).

On the contrary, scholars who rely on stewardship theory (Barney, 1990; Donaldson and Davis, 1991) claim that shareholder interests are best served under a joint leadership structure. Here the assumption is that dual CEOs are motivated to act in the best interests of the firm by the intrinsic satisfaction that results from achievement, recognition, and reputation. This positive view is further supported by proponents of resource dependency theory who stress that dual leadership enhances managerial discretion which results in a greater ability to comply with a dynamic business environment and to secure critical resources. Studies show that CEO duality could be beneficial in terms of making optimal decisions (Ya'acoba, 2016; Yang and Zhao, 2014) and also in terms of financial reporting quality (Agrawal and Chadha, 2005; Uzun *et al.,* 2004; Beasley, 1996). Furthermore, empirical studies such as Brickley et al. (1997) suggest that CEO duality is often the reward for good performance.

However, the existing evidence is not always consistent with such positive view of CEO duality.

Duru *et al.* (2016) find a negative effect of CEO duality on firm performance, though this effect is moderated (reduced) in the presence of higher board independence. In a similar vein, Combs *et al.* (2007) show that effective monitoring by independent boards coupled with powerful CEOs can serve as an important source of competitive advantage.

Still, other studies such as Rubino *et al.* (2016) and Ben Barka and Legendre (2016) find no significant effect of CEO duality on firm value.

Considering all the above, we propose the following hypotheses both in a null form:

Hp4a. CEO duality has an impact on firm performance

Hp4b. CEO duality moderates the impact of board independence on performance

2.5. Ownership concentration

The relationship between ownership concentration and firm performance has also attracted much research attention because ownership concentration is thought to be an effective monitoring mechanism reducing the likelihood of managerial opportunism and the related agency costs. According to agency theorists (Jensen and Meckling, 1976) dispersed ownership structures give rise to conflicts between managers and owners, because managers who are assumed to be self-interested agents typically have much more information about the company than shareholders and can use their superior information to extract rents at the expenses of their principals (Type I agency problem). While dispersed owners have neither incentives nor means to monitor managers, concentrated owners have both means and motivation to discipline managers, with resulting beneficial effects in terms of performance. Concentrated owners can also use their knowledge and resources to enhance the resource endowment of firms (Carney and Gedajlovic, 2001).

On the counterpart, ownership concentration may also result in (Type II) agency problems since controlling shareholders may expropriate non-controlling shareholders by tunneling firm wealth through self-dealing or related party transactions, asset stripping and investor dilution (La Porta *et al.,* 1999.). When this is the case, ownership concentration can have a negative impact on profitability.

Empirical evidence on the impact of ownership concentration is mixed. Moreover, many empirical studies focus on the conflict between unmonitored managers and dispersed owners which is typical of the Anglo-American context. For instance, Demsetz and Lehn (1985) using data from 511 US firms find no significant relationship between ownership concentration and accounting profit returns. However, in an often-cited study of 371 US companies, Morck *et al.* (1988) find a significant non-monotonic relationship between both ownership concentration and profit rates and ownership concentration and firm value (Tobin's Q). One interpretation is that firm performance improves with higher managerial ownership, but beyond a certain threshold managers become entrenched and pursue private benefits at the expense of outside investors.

Alternatively, Claessens *et al.* (2002b) investigate the relation between firm valuation and ownership structure in the context of public traded East Asian corporations which are mostly controlled by a single large shareholder. They find that firm value as measured by the market-to-book ratio increases with the share of cash flow rights in the hands of the largest shareholders. However, they also document that firm value falls when the control rights of the largest shareholders exceed his cash-flow ownership, which provides incentives to expropriate non-controlling shareholders.

Studies have also examined the relation between ownership concentration and performance in the context of small European capital markets. Among these latter are Kapopoluos and Lazaretou (2007) and Perrini *et al.* (2008) who use samples of Greek and Italian public listed companies (PLCs) respectively. Both studies document a positive association between ownership concentration and performance, thus supporting the notion that the higher the ownership concentration the more effectively manager behavior is monitored and disciplined, thus resulting in better performance.

Additionally, scholars argue (Singh and Gaur, 2009; Gaur *et al.,* 2015) that higher ownership concentration make the monitoring role of corporate boards less important as ownership concentration reduces agency problems. An implication of this argument is that under concentrated ownership structures, the presence of internal members on the board may become more important relative to independence and other board-level mechanisms such as CEO-Chairman separation, essentially because agency problems are reduced and consequently boards would perform more of an advisory than a monitoring role. Consistent with this view, Gaur *et al.* (2015) find that in the presence of high ownership concentration, the presence of internal directors and CEO duality leads to superior accounting performance.

Based on these arguments, we explore whether the degree of ownership concentration acts as a contingency factor in the relation between board structure and performance. Therefore our fifth research hypothesis stipulates that:

Hp5. The relation between board characteristics and performance is contingent on the degree of ownership concentration.

3. RESEARCH DESIGN

The objective of this paper is to analyze the impact of internal governance mechanisms on the financial performance of Italian listed firms. Specifically, we explore the performance impact of board size, board independence, CEO duality, full independent audit committees, accounting for the role of ownership concentration.

For this research purpose, we use a sample of firms listed on the Italian Stock Exchange in Milan spanning a five-year-period from 2011-2015. We exclude banks and other financial institutions because their governance arrangements are chiefly dictated by legal criteria (Giovannini, 2010).

The final sample is comprised of 56 firms totalling up to 230 firm-year observations.

We extracted data on firm performance and control variables from the AMADEUS database. Data on corporate governance were collected from the annual reports of sample firms retrieved on the 'investor relations' section of their official websites.

3.1. Dependent variable

As a proxy for firm performance we use return on assets (ROA), an accounting-based performance measure which has been largely used in corporate governance research (e.g.: Galeotti, 2006; Easterwood et al. 2012; Terjesen et al. 2016; Sheikh *et al.,* 2011; Duru *et al.,* 2015; Pèrez-Calero *et al.,* 2016; Ben Barka and Legendre, 2016). ROA is calculated as the ratio of net income to total assets.

Hutchinson and Gul (2004) argue that use of accounting ratios are preferable to stock market ratios to investigate the relationship between performance and corporate governance since they best reflect management's deviant behavior.

3.2. Control variables

We control for variables that have been shown to affect the governance-performance relationship (Dalton *et al.,* 1998) and specifically firm size and leverage.

Firm size (FIRM SIZE) is included in the analysis in order to account for any confounding effect it might have on ROA. Similar to prior research (Mishra and Mohanty, 2014) market capitalization is used to proxy firm size.

Leverage ratio (Lev), as measured by the ratio of total debt to total assets (Firer and Stainbank, 2003; Duru *et al.,* 2016), is used to control for the impact of debt servicing on profitability.

3.3. Explanatory variables

The independent variables used in this study are board size, board independence, audit committee (AC) full independence, CEO-duality and an interaction variable between CEO duality and board independence.

Board size (BOSIZE) is measured by the ratio of board members to the natural logarithm of total assets.

Board independence (BOIND) is measured by the ratio of independent directors to the total number of board directors.

AC full independence (ACFULLIND) is measured by a dummy variable which codes 1 if the audit committee is entirely composed of independent members and 0 otherwise.

CEO duality (CEODUAL) is measured by a dummy variable coded 1 if the CEO is also the chair of the board and 0 otherwise.

4. REGRESSION MODEL

We run the baseline regression model (1) separately on two sub-samples. Specifically, we split observations by the degree of ownership concentration (OC) separating firms with higher-than-median (> 0.50) from lower-than-median OC (≤ 0.50). As in prior research studies (Allegrini and Greco, 2013), we measure ownership concentration by the proportion of ordinary shares held by the first largest shareholder.

The reason for selecting this type of analysis is that we can thereby make direct inferences about the effect of ownership concentration on the link between board characteristics and financial performance by not including the ownership concentration variable directly in the model and thus avoiding potential endogeneity issues.

The functional form of the regression model is as follows:

$$\begin{aligned} In\ ROA = {} & \beta_0 + \beta_1 BOSIZE + \beta_2\, BOIND \\ & + \beta_3 ACFULLIND \\ & + \beta_4 CEODUAL + \beta_5 CEODUAL \\ & * \ BOIND + \beta_6 InFSize \\ & + \beta_7 Lev + \varepsilon \end{aligned} \quad (1)$$

5. RESULTS

5.1. Descriptive statistics

Table 1 presents the descriptive statistics for the sample firms in the time-period under investigation. In terms of board characteristics, the average board size is 10 with nearly 51% of board members being independent directors. The roles of board chairmen and CEO are combined in 23% of sample firms, and about 66% of them have a full independent AC committee.

Referring to the findings of prior research on Italian listed companies (Ianniello, 2013), the average board size observed in this study is comparable, whereas the proportion of independent directors is higher and CEO duality is lower. This outcome might be partly due to sampling difference and partly to

increased compliance with the recommendations of Corporate Governance Code.

The average percentage of shares held by the first largest shareholder is 0.47, which confirms that Italian listed firms are characterized by high (though varying) degrees of ownership concentration.

Table 2 presents Pearson pair wise correlations for the dependent and independent variables.

Correlation analysis is also helpful in detecting the presence of multicollinearity among explanatory variables.

Table 1. Descriptive statistics

Variables	*N*	*Min*	*Max*	*Mean*	*Std dev*
ROA	230	-.712	.356	.14344	.0996699
1stSHAREHOLDER	230	.0558	.7889	.4776208	.1589614
BOSIZE	230	5	15	10.23333	2.48989
BOIND	230	.1818182	.8888889	.5074222	.1667151
CEODUAL	230	0	1	.2333333	.4236593
ACFULLIND	230	0	1	.6619217	.4738993
LEV	230	0	1.49	.5510333	.3156836
FIRM SIZE	230	.0940478	24.95704	20.62826	3.416584

As shown in the table the inter-correlations among predictors range in absolute values from a low of 0.02 to a high of 0.506. According to Kennedy (1985), multicollinearity should be considered a serious concern only if the correlation between predictors exceeds 0.80.

An additional test for multicollinearity was conducted by estimating the variance inflation factors (VIF), consistent with the study by Weisberg (1985). Again using a cut-off value of VIF = 5 (see Craney and Surles, 2003), no serious concern of multicollinearity among predictors was detected (see Table 3).

Table 2. Correlation matrix

	ROA(ln)	*1st SH*	*BOSIZE*	*BOINDP*	*CEODUAL*	*AC FULLIND*	*CEODUAL× BOIND*	*LEV*	*FIRM SIZE*
ROA(ln)	1					c			
1stSHAREHOLDER	-0,0287	1							
BOSIZE	0,1221	0,0338	1						
BOIND	-0,2025***	-0,0308***	-0,1692***	1					
CEODUAL	0,0283	0,1690***	0,0263	-0,3001***	1				
ACFULLIND	-0,2325***	-0,2345***	0,1895***	0,2904***	-0,0799	1			
CEODUAL× BOIND	0,0504	-0,1475***	-0,0460***	0,4996***	-0,5062***	0,0944	1		
LEV	-0,3474***	-0,1931***	0,0622	0,2917***	-0,1291**	0,2516***	0,0532	1	
FIRM SIZE	0,1296**	-0,1965***	0,0328	0,1965***	-0,0352	0,1274**	0,0190	0.0759	1

*Notes: ***, ** and * indicate a level of significance at 1%, 5% and 10% respectively*

5.2. Regression results

Table 3 conveys the results of the regression analysis. Standard errors are computed using robust methods in which observations are clustered by firm. This allows us to exploit information in both the cross-sectional and time-series of data, controlling for the potential serial correlation in each firm's time-series of observations (see Boone *et al.,* 2007).

Table 3. Regression Results

Explanatory variables	*Dependent variable: ROA(ln)*					
	Panel A: Lower OC			*Panel B: Higher OC*		
	Coefficients	*t-values*	*VIF*	*Coefficients*	*t-values*	*VIF*
Cons	-1.491738	-1.49		-4.725081**	-6.40	
BOSIZE	-2.326737	-1.43	1.35	2.178107	2.32	1.22
BOIND	-2.853472**	-2.47	2.41	-3526163	-0.45	1.67
CEODUAL	1.127275***	4.02	5.40	0.1439636	0.60	1.17
ACFULLIND	-0.7419395*	-1.81	1.38	-0.4299289*	-1.75	1.34
CEODUAL×BOIND	11.25952*	7.65	5.53	1.053722	0.68	1.66
LEV	-0.0175464*	-5.28	1.59	-1.037644*	-3.48	1.08
FIRM SIZE	0.0698818**	2.06	1.43	0.0570129**	2.36	1.07
R-squared	0.4213			0.2557		
F-statistic	8.01***			3.96***		
N. of observations	84			146		

*Note: ***, ** and * indicate a level of significance at 1%, 5% and 10% respectively*

Panel A and Panel B list the parameter estimates for lower and higher-OC firms respectively. For both sub-samples, the explanatory power of the model is relatively good with R-squared values of 0.42 and 0.25. However, results indicate that board attributes differently impact firm performance in lower-OC relative to higher-OC firms. Noticeably all the primary variables of interest

except board size (p>0.10) have a statistically significant impact on performance in firms with lower levels of OC (specifically the coefficients on BOIND, CEODUAL, ACFULLIND and CEODUAL× BOIND are significant at p<0.05, p<0.01, p<0.10 and p<0.10 respectively) while in the case of higher-OC firms only coefficients on BOSIZE and ACFULLIND meet a conventional level of significance (p<0.05 and p<0.10 respectively). Overall these findings are consistent with our contingency argument (Hp5) that the performance impact of board attributes is dependent on the level of ownership concentration. Hence it appears that higher ownership concentration would serve as a substitute for governance mechanisms at board-level.

Also interestingly, the sign of coefficients on board independence and AC independence are negative while the sign on CEO duality is positive, which challenges the arguments of agency theorists who strongly advocate for outsider-dominated boards, AC independence and the separation of the CEO and chairman roles. Furthermore, the coefficient on the interaction term (CEODUAL× BOIND) has a positive sign indicating that a dual leadership structure has not only a direct effect on performance but also moderates (positively) the relation between board independence and performance. Possible explanations for all such findings are outlined below.

6. DISCUSSION AND CONCLUSIONS

This paper supports a contingency perspective on the relation between board composition and firm performance and specifically explores the role of ownership concentration in affecting this connection.

In terms of our research hypotheses, the main findings of this study may be summarized and explained as follows.

As far as lower-OC firms are concerned, the coefficient on board size is negative and not statistically significant, thus Hp1 is not supported for this subsample. Diversely, the coefficient on board independence is negative and significant, thus verifying Hp2. This finding, backed by prior research (Gaur *et al.,* 2015; Sheikh *et al.,* 2013; Ehikioya; 2009; Chen *et al.,* 2006; Kiel and Nicholson, 2003, Coles *et al.,* 2001; Agrawal and Knoeber, 1996), is consistent with a stewardship theory perspective on board independence which argues against having outsiders on the board on the grounds that outsiders do not have enough knowledge of the strengths and weaknesses of the firms to serve in an advice-and-counsel role (Davis *et al.,* 1997; Finkelstein and D'Aveni, 1994). With regard to the third hypothesis (Hp3), we find a negative association between AC full independence and firm performance, thus Hp3 is supported. This finding challenges the (agency) view that an independent monitoring of the financial and risk management processes enhances firm performance, at least as far as accounting performance is concerned. We might tentatively explain this result by assuming that firms establish a fully independent audit committee when they face financial troubles as a means to comfort the markets and/or strengthen their internal audit and risk systems. Practically it might be an issue of reverse causality (Ben Barka and Legendre, 2016). In relation to the fourth hypothesis (Hp4a), we found a positive and statistically significant association between CEO duality and firm performance. This result runs counter the predictions of agency theory which argues that combining both roles into a single position weakens board control which, in turn, would negatively affect performance. It rather supports the predictions of stewardship theory suggesting that authoritative decision making under the leadership of a single individual leads to higher performance. Furthermore, this evidence is consistent with a number of previous studies (e.g.: Sheick *et al.,* 2013; Abor and Biekpe, 2007; Donaldson and Davis, 1991). Additionally, we found a positive and statistically significant interaction effect of CEO duality and board independence on performance, which verifies Hp4b. This finding supports the argument that effective monitoring by independent boards coupled with powerful CEOs can serve as an important source of competitive advantage (e.g. Combs *et al.,* 2007). It is also consistent with prior works by Finkelstein and D'Aveni (1994) and Quigley and Hambrick (2012) which propose and support the hypothesis that the potential agency and inertial effects of legacy preservations costs associated with a powerful CEO may be mitigated by the vigilant oversight of independent members acting as stewards of shareholder value.

Conversely, for firms with a higher ownership concentration, results change to a large extent. Specifically, the coefficient on board size becomes positive and statistically significant, which is in line with the findings of Lipton and Lorsch (1992), Jensen (1993), Yermack (1996) and Anderson and Reeb (2004). This can be explained under the tenets of resource dependency theory, which suggests that larger boards with a high level of links to the external environment improve provide firms with access to additional resources, which in turn positively influence firm performance. This finding corroborates prior evidence from the Italian setting casting doubt on the conventional view that smaller boards are the preferable governance structure (Allegrini and Greco, 2013). As far as the other variables of interest are concerned, the coefficients on board independence and CEO duality as well as the interaction term while keeping the same sign are statistically insignificant at any conventional level of confidence, indicating that: 1) board independence has no significant impact on performance 2) CEO duality has no differential impact on performance vis-à-vis a separate leadership and 3) does not exert any moderating effect on the relation between board independence and corporate performance. Accordingly Hp2, Hp4a, and Hp4b cannot be accepted for this subsample. A possible explanation is that under higher concentrated ownership structures these internal governance mechanisms become less important as the need for a strict oversight of management by independent members relaxes and other internal attributes take priority such as recruiting additional board members in an advisory capacity. This would also explain why board size is significant only for higher-ownership concentration and not for lower-ownership concentration firms. The only variable that remains statistically significant is AC full independence, thus Hp4b is supported for higher-OC firms as well.

7. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

This research suffers from several limitations. First, despite the fact that the Italian corporate setting presents features that are common to some other European countries, it does not imply that our findings and conclusions are applicable to other national contexts especially those with different legal systems. Second, our analysis is restricted to the largest Italian listed companies; hence the study is biased towards this type of firms. Future research should extend to cross-national samples of firms and possibly to non-listed firms as well; moreover, it should verify if our results hold under different performance specifications such as market-based firm performance measures. Third, the empirical results may depend on the methodological choices in that we only distinguish sample firms by the level of ownership concentration, whereas other governance mechanisms such as the direct involvement and representation of owners at board level or the type of ownership (familial, institutional, State) may affect the relation between board structure and firm performance; furthermore future studies could augment our results by extending the analysis beyond firm-level contingencies to the external (macro-level) contingencies on which the relation between board attributes and performance may depend. For instance, a recent stream of research (e.g. Zattoni *et al.,* 2017) has documented that the effectiveness of governance mechanisms developed at the firm level is contingent on the features of the national institutional environment. It implies that some institutions such as the efficiency of the judicial system (Lepore *et al.,* 2017) or the financial structure of the economy (e.g. equity-based versus credit-based financing) can either increase or reduce the impact of internal governance attributes on corporate performance. Accordingly, future studies may explore the potential complementarity and substitution effects between firm-level mechanisms and country-level institutions (see Schiehll *et al.,* 2014).

Eventually, this study does not control for the potential endogenous relationship between board attributes and performance. The endogenous phenomenon is a reverse causality problem between board-level variables and performance. It implies that not only board attributes may impact performance but also (past) performance may impact board composition. As an example, Hermalin and Weisbach (1998) document that poor performance of a firm can result in the replacement of inside directors with outside directors on the board. Accordingly, the historically poor performing firms would have a higher proportion of outsiders on the board and audit committees. If such firms were part of our sample there might be a problem of endogeneity in the analysis which warrants further empirical probing in future research. A typical method to address this issue is via the use of 'dynamic' panel data models such as the System Generalized Method of Moment (System GMM) which allows current values of explanatory variables to be influenced by past levels of firm performance (see Arellano and Bower, 1995; Blundell and Bond, 1998).

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