

*Full Length Research Paper*

# Corporate governance issues and director compensation structure in Spanish companies

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Accepted 15 June, 2011

**The absence or failure of some mechanisms of corporate governance facilitates to board members on the possibility of establishing a reward system more suitable to their own personal interests rather than to those of investors. Nowadays, this problem has intensified the lack of investors confidence in the members of the board of directors, whose payment levels have been criticized, especially over the last few years. In this context, this study aims to verify empirically the relationship between the characteristics of boards of directors and the level and structure of compensation of directors in Spain, in order to analyze its significance in the control of salaries. With a view to testing this hypothesis, we selected a sample of 76 listed Spanish corporations for the period 2004-2009. The results of this work reveal that control mechanisms like the separation of the figures of the chairman and the chief executive officer (CEO), the shareholding of board members, and the percentage of independent directors were found to be significant in reducing the levels of remuneration to the members of the board, specifically, cash payments received by them. Therefore, the characteristics of the board may influence their own remuneration, particularly in an ownership concentration context.**

**Key words:** Directors compensation, board of director, data panel analysis, corporate governance.

## INTRODUCTION

Cases like Enron and American International Group (AIG) have questioned the behaviour of a number of boards of directors in relation to their performance in their function of supervision and control, among other things, over their own remuneration. Proof of such behaviour is that, in some of these cases, the salaries received by directors came from artificially obtained benefits at the same time that these corporations were facing financial and economic difficulties or, even worse, they were bankrupt (Ingley and Walt, 2005).

In this sense, there is a controversial debate about the reasonableness of the compensation received by directors. It is a sensitive issue that gives rise to all sorts of interpretations regarding to the effectiveness of board of directors in their function as supervisor and controller over the management. To avoid this situation, recent regulatory attempts to control the opportunistic behaviour of the directors have been oriented primarily towards increasing the transparency of information regarding to board's compensation and the inclusion of recommendations about the structure and composition of this remuneration<sup>1</sup>, as well as strengthening of corporate control mechanisms based on the characteristics of the board of

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**Abbreviations:** AIG, American International Group; CEO, Chief Executive Officer; ROA, Return on Assets; PPC, Percentage of Board Ownership; NMCA, size of board; OTS, Percentage of Outside Directors; PCE, Chairman of board and CEO; SIBE, Spanish Computerized Trading System.

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<sup>1</sup> In Europe, the European Commission published a recommendation in relation to the remuneration of directors of listed companies (3177/2009/CE). In Spain, on the one hand, the Spanish Securities Markets Commission (CNMV) issued a consultation on proposed amendments to the Unified Code of Corporate Governance (2006) applicable to Spanish listed companies, taking into consideration the above recommendations proposed by the EU. On the other hand, the inclusion in Art 25 of the Draft Law on Sustainable Economy of an

Directors<sup>2</sup>.

From the Agency Theory point of view, mechanisms<sup>3</sup> such as the board of directors and compensation contracts, among others, allow companies to exercise corporate control, preventing opportunistic behavior of managers in respect of shareholders and of controlling shareholders against minority shareholders. Thus, both mechanisms are critical in the context of corporate governance and are closely related, especially in matters concerning directors' earnings. On the one hand, the board of directors is the body which should safeguard the interests of shareholders in all aspects, especially in determining their own compensation. On the other hand, the earnings of directors aims to control potentially opportunistic behavior of the board itself (Cordeiro et al., 2000).

At the empirical level, many studies have focused on analyzing the relationship between the ownership structure of the company, the characteristics of the board of directors and the remuneration of the chief executive officer (CEO). However, the compensation of directors as resource of expropriation of wealth from shareholders, and their interaction with other corporate governance mechanisms (characteristics of the board of directors) has been less studied. To this it should be added that the most of studies have been developed to Anglo-Saxon business context which is characterized by strong investor protection, developed capital market, strict insider trading regulations and dispersed ownership. In contrast to that, the typical firm in Europe operates in an environment totally different (weaker investor protection, less developed capital market, less strict insider trading and concentrated ownership). These differences lead to agency conflicts. Motivated by these circumstances and the lack of research about the relation between board of directors' characteristics and their own compensation, in a concentrated ownership context, in this study we extend prior research about corporate governance and earnings of management using a sample of listed Spanish firms over the 2004 to 2009 period. So, the main objective to this work is to analyze the effectiveness of the characteristics of the board to moderate the level and structure of its members' compensation.

Our work is especially significant in the current Spanish context and in other contexts with concentrated ownership business, where the institutional intervention is active to moderate the levels of remuneration received by directors in order to increase the confidence of other

stakeholders, especially minority shareholders, in board control function. The results reveal that control mechanisms like the separation of the figures of the chairman and the CEO, the shareholding of board members and the number of outside directors in the board, are significant in reducing their levels of remuneration, specifically, cash payments received by them.

This work is organized as follows: first, we carried out a review of previous literature on the subject; secondly we set out the research design, defining the sample and the variables under study; thirdly, the application of relevant statistical techniques to deal with the analyses of results; and finally, we set out the main conclusions.

## RELATED LITERATURE REVIEW

### Structure of director-level compensation

While management compensation has been widely discussed over the years, the issue of director compensation has started to receive attention only very recently<sup>4</sup> (Brick et al., 2006; Andreas et al., 2009). On the back of previous studies focused on executive compensation, the following points stand out.

On the one hand, there is no fixed/standard structure for compensation either at management or executive level. In fact, previous research indicated that pay structures change drastically from one country to the next across all sectors (Conyon and Murphy, 2000; Thomas, 2008).

On the other hand, research in management compensation has focussed, as is the case in the U.S., on two types of payments: "cash pay" (defined as the sum an annual salary plus any other bonuses) and "non-cash" items (stock options, restricted stock, long-term incentive plans, and all other annual compensation), (Angbazo and Narayanan, 1997; Core et al., 1999; Anderson and Bizjak, 2003; Dávila and Peñalva, 2004; Brick et al., 2006; Conyon and He, 2008; Raviv and Landskroner, 2009). Within the category of "non-cash" items many studies are purely based on equity-based compensation, essentially dealing with the delivery of stocks and stock options (Angbazo and Narayanan, 1997; Becher et al., 2005; Chhaochharia and Grinstein, 2009).

The measures previously stated are based on the importance of variable pay in the U.S., where one's salary only comprises just over one quarter of the total compensation. In Europe, however, the percentage of cash pay comprises 83% of the total remuneration received by members of the board of directors (Heidrick

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explicit reference to increasing the transparency of information regarding the salaries of directors of listed companies. Both measures are pending to pass.

<sup>2</sup> The European Union published the Green Paper on corporate governance in financial institutions and remuneration policies (2010). For its part, recently the CNMV has closed a Consultation on the mentioned Green Paper.

<sup>3</sup> The mechanisms proposed by the Theory of the Agency are: Board of Directors, design of compensation contracts, General Meeting of Shareholders, financial structure, ownership structure, markets for goods and services, capital market, labor market for directors; and market for corporate control (See Fama E, Jensen MC (1983). Separation of ownership and control. *J. Law Econ.* 26: 301-325; Gillan SL (2006). Recent development in corporate governance: An overview. *J. Corp. Financ.* 12: 381-402).

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<sup>4</sup> Andreas *et al.* (2009) explain that this trend can be attributed to two developments. First, in the light of corporate scandals and the financial crisis, questions are being raised about the role of directors and the adequacy of their incentives schemes. Secondly, an emerging stream of literature is dealing with board involvement and its effect on firm behavior, such as diversification or R&D strategy.

and Struggles Report, 2009).

In general terms, the structure of remuneration of directors, in keeping with Spanish practice, may comprise the following: fixed salary, variable salary, attendance fees, and benefits in respect of bylaws, stock options and/or other financial instruments and other compensation<sup>5</sup>. Fixed salary only includes the amounts paid to directors for their participation as board directors. This pay remains constant and is independent of the level of activity or any potential impact that management may have on the company's results. Variable salary includes amounts received in the form of profit sharing or any other formula that links these perceptions to the achievement of specific measurable objectives (company's net profit or other financial management indicators). Attendance fees are referred to expenses incurred by directors for attending meetings of the board and its delegated committees. The aim of this type of compensation is to encourage the active participation of directors. Stock options and/or other financial instruments include the delivery of stocks and stock options.

The main argument in favor of the last payment system mentioned, based on the Agency Theory, is that it aims to align the interests of managers and shareholders (Rubinstein, 1995; Zhang, 2002; Oyer and Schaefer, 2003; Kato et al., 2005; Sesil and Lin, 2005; Damodaran, 2005; Hodder and Jackwerth, 2005) by linking future remuneration to the value of shares.

### **Board of directors**

Existing literature shows that certain board structures reduce agency problems (Hermalin and Weisbach, 1988; Yermack, 1996). The measures that are frequently used to review the effectiveness of the board's governance are, amongst others (Ryan and Wiggins, 2004; Cheng and Firth, 2005; Conyon and He, 2008; Andreas et al., 2009; Fahlenbrach, 2009): participation of the board of directors in shareholding, encharging the same person with the roles of both chairman of the board (or president) and CEO, and the size of the board and how it is made up in relation to the inclusion of independent members. These variables can affect significantly on the capacity of the board of directors to act efficiently in its function of supervision and control on the director's compensation. This is shown in Table 1.

### **Board Ownership**

The Agency Theory supports the idea that the participation of the board of directors in shareholding is a powerful incentive to exert control (Shleifer and Vishny,

1997), achieving the alignment of management with the interests of shareholders (hypothesis of convergence). Nevertheless, it also accepts the possibility that an excessive participation in shareholding could be used by insiders to avoid their dismissal in the case of inefficient behavior (hypothesis of entrenchment). So, when the involvement of directors and managers escalates to the point that they themselves become the major shareholders, the convergence of interests are once again recovered (hypothesis of convergence). Empirically, the results show the predominance of one or other of the hypotheses depending on the varying ranges of board member involvement in respect to shareholder participation (Morck et al., 1988; Hermalin and Weisbach, 1991; Fernández et al., 1998; Grullon and Kanatas, 2001; Hillier and McColgan, 2001; Mínguez and Martín, 2003).

In relation to director compensation, theoretically in firms with a higher degree of board or management ownership, both directors and management have a greater incentive to maximize stock returns. This incentive downplays importance to high compensation in cash and approval of stock-based compensation plans (Cordeiro et al., 2000; Cheng and Firth, 2005).

Empirically, some authors (Boyd, 1996; Bryan et al., 2000; Cordeiro et al., 2000) found total director compensation to be lower in firms in which a substantial proportion of shares are held by the board or by management. However, in Spain, Arrondo et al. (2008) did not find a significant relationship between the compensation to directors and shareholding. Following the most common results, we propose the following hypothesis:

H<sub>1a</sub>: There is a negative relationship between board ownership and total remuneration to directors.

In relation to the cash compensation, Cordeiro et al. (2000) find that cash compensation is negatively related to the percentage of stockholdings of insider directors and executives. This finding might indicate that directors need less fixed cash compensation since they already benefit directly from the value of their shares.

Contrary to these findings, Bryan et al. (2000), by introducing variations into their initial research model, obtained a positive relationship between the percentage of ownership of board members and the level of cash compensation, when board level involvement was very high. This has been interpreted as directors preferring diversified investment when they own a high number of shares as, at these levels of ownership, they are adverse to risk thus shareholders respond by furnishing them with adequate monetary incentives to avoid potential value losses. These results are consistent with the findings of Basu et al. (2007), who interpret them as being based on the high level of shareholder ownership of board directors provides them with greater discretionary powers when fixed higher rates of remuneration. Taking these arguments into consideration we propose to test the following hypothesis:

<sup>5</sup> Other potential benefits directors may obtain include: advances, loans, funds and pension plans, insurance premiums and guarantees provided for directors.

Table 1. Research model.

Dependent variable	Independent variable	Control variable
Director compensation	Corporate governance (Board of director characteristic)	
Cash compensation	Board ownership	Firm size
Non-cash compensation	CEO/Board Chair duality	Profitability
Total compensation	Outside directors Board size	Industry

H<sub>1b</sub>: There is a negative relationship between board ownership and “cash” remuneration to directors.

As regards the stock-based compensation, authors like Fich and Schivdasani (2005) and Ertugrul and Hedge (2008), among others, find a negative association between managerial stock ownership and stock-based compensation for directors, suggesting that when managers’ incentives are aligned with shareholders, there is less necessity to monitor the directors behaviour through equity-based compensation incentives. This suggests the following hypothesis:

H<sub>1c</sub>: There is a negative relationship between board ownership and “no-cash” remuneration to directors.

### CEO and board chair duality

One of the relevant aspects of the board’s structure is the accumulation of power (Dalton and Dalton, 2011), as is the case when the same person holds down the position of chairman of the board and CEO of the corporation. Though theoretically the accumulation of power could facilitate the transmission of information and reduce the costs of coordination, this aspect has been the object of considerable criticism, given that it could lead to decision making to the benefit of management over and above the company’s shareholders (Jensen, 1993; Coles et al., 2001). In fact, previous empirical studies suggest that agency problems are greater when the chairman of the board is, at the same time, the CEO (Yermack, 1996; Wang et al., 2010), which negatively affects the actual control of the board (Morck et al., 1988) and their effectiveness (Hermalin and Weisbach, 2003). Consequently, we propose the following hypothesis:

H<sub>2a</sub>: There is a positive relationship between Chairman of the Board and CEO duality and total remuneration to directors.

In the area of director remuneration, such inefficiency has been demonstrated by Brick et al. (2006) who found that the accumulation of power is positively related to director’s compensation. In keeping with this, and in relation to the structure of compensation, Ryan and Wiggins

(2004) found that directors of firms with dual CEO/chair responsibilities receive more pay in cash. Thus, the following hypotheses can be developed:

H<sub>2b</sub>: There is a positive relationship between duality and “cash” remuneration to directors.

H<sub>2c</sub>: There is a positive relationship between duality and “no-cash” remuneration to directors.

### Outside directors

Boards of directors are composed of insiders<sup>6</sup> and outsiders<sup>7</sup>. The existence of both types of members gives value to the corporation. Though the insider members may have their own interests in respect of the firm’s objectives (Raheja, 2005), they are an important source of information for the board (Fernández and Gómez, 1999). The outsiders are more independent, assuring more control despite the fact that they may have less information about the firm’s opportunities or threats (Linck et al., 2008). In relation to this, the distinct codes of good governance recommend that there should be a majority of external members on the board of directors<sup>8</sup>.

In this vein, authors like Conyon and He (2008) point out the role of the outsiders as a control mechanism; due to their experience in decision making, they are less exposed to influences and have a reputation to maintain in the job market. This leads us to think that the outside members of the board are more effective in looking after the interests of shareholders. Consequently, compensation may have less importance as a mechanism in aligning the interests of management and shareholders. In fact, previous empirical studies (Conyon and Peck,

<sup>6</sup> Those who belong to the Board in their role as company directors.

<sup>7</sup> Those members that do not hold managerial positions in the corporation.

<sup>8</sup> In the unique case of Spain, within the external directors it is possible to make the distinction between proprietary and independents. The proprietary represent the owners of blocks of shares of the company, and as such, hold influence over the control of the company (Arrondo *et al.*, 2008). This circumstance is due to the ownership of Spanish companies being highly concentrated. For this reason, the figure of independent outsider directors of Spanish companies would be comparable to non-executive directors within other contexts, as is the case with America. As stated by the Olivencia Code, independent directors should be: “[...] people of unrelated professional prestige in respect of the executive team and major shareholders.”

1998; Sánchez and Lucas, 2008) assert that the presence of a majority of outside members has a bearing on lower levels of management compensation. However, other research did not, find relationship between the proportion of non-executive directors on the board and top management compensation (Cheng and Firth, 2005).

In relation to director remuneration, Ryan and Wiggins (2004) found that outsider-dominated boards receive more cash compensation. Although total compensation and equity-based compensation are not statistically different in firms with more outside directors, outsider-dominated boards are more likely to receive equity-based compensation. Meanwhile, Vafeas (1999) found a strong relationship between the proportion of outside directors and the adoption of a director compensation scheme (grant of stock or options). These results are similar to those obtained by Ertugrul and Hedge (2008) and Minnick and Zhao (2009).

In the Spanish context, Sánchez and Lucas (2008) found a negative relationship between the number of outside directors (proprietary and independent) and total director compensation. Similarly, Arrondo et al. (2008) found that the percentage of independent outside directors has a negative correlation with the level of compensation of directors. This is interpreted accordingly: that the presence of independent directors encourages moderate remuneration more in line with the interests of shareholders. So, we test the following three hypotheses related to the number of outside directors and the level of remuneration:

H<sub>3a</sub>: There is a negative relationship between outside directors and total remuneration to directors.

H<sub>3b</sub>: There is a negative relationship between outside directors and “cash” remuneration to directors.

H<sub>3c</sub>: There is a negative relationship between outside directors and “no-cash” remuneration to directors.

### **Board size**

In general there is no consensus in relation to the size of the board of directors to optimize the efficiency of its function of supervision and control. Some authors, like Pearce and Zahra (1992) and Lehn et al. (2003), coincide pointing out that a large number of members favour the diversity of criteria and the level of information about the factors that could affect the value of the corporation. Yet others, like Lipton and Lorsch (1992) and Jensen (1993), argue that a larger board implies less speed and efficiency in the decision making process, due to the fact that some problems related to coordination and information could emerge.

In fact, the results of previous studies are not unanimous regarding the relationship between the size of the board and director compensation. Core et al. (1999) found a strong, positive relation between top executive compensation and board size for U.S. firms. However,

Basu et al. (2007), in looking at the case in Japan, did not find a significant relation between number of director and top executive payments.

With a sample of 2,404 U.S. companies, Brick et al. (2006) found that the number of directors is not significantly related to director cash payments and total compensation. In contrast, Ryan and Wiggins (2004) found that small boards receive higher total compensation. However, their results show that the structure of compensation is composed of lower pay in cash (46% of total compensation compared to 55.4% received by their counterparts on large boards) and higher stock-based payments (54% compared to 45%). In Germany, Andreas et al. (2009) show a significant but inverse relationship between board size and total director compensation. These results are due to lower share-based compensation for members of the larger boards in line with the arguments set out by Ryan and Wiggins (2004). By contrast, in the Spanish context, Sánchez and Lucas (2008) found a positive relationship between the board size and total board compensation. So, no consensus about the direction of this relationship in previous literature, thus proposing the following hypotheses:

H<sub>4a</sub>: There is a positive or negative relationship between board size and total remuneration to directors.

H<sub>4b</sub>: There is a positive or negative relationship between board size and “cash” remuneration to directors.

H<sub>4c</sub>: There is a positive or negative relationship between board size and “no-cash” remuneration to directors.

### **Control variables**

Director's compensation is related to firm characteristics, especially its size, corporate performance and industry. These relationships are further demonstrated in previous empirical studies across different countries.

### **Firm size**

The positive influence of the size of the corporation over the levels of retributions to management is widely demonstrated (Bebchuk and Grinstein, 2005; Fernandes, 2005; Haid and Yurtoglu, 2006; Barontini and Bozzi, 2008). It is based on the idea that the larger corporations need better qualified executives.

In the context of director remuneration, many studies have found a positive relationship between the firm size and total director compensation (Elston and Goldberg, 2003; Ryan and Wiggins, 2005; Brick et al., 2006; Arrondo et al., 2008; Andreas et al., 2009) and firm size and performance-based compensation (Ryan and Wiggins, 2005; Ertugrul and Hedge, 2008; Minnick and Zhao (2009).

For example, Brick et al. (2006) found that total director compensation is positively related to firm size, taking as proxy of the size the log of number of employees. However,

the director's total compensation is also negatively related to the log of sales. Additionally, they found that the proportion of non-cash compensation is positively related to the log of the number of employees. Ryan and Wiggins (2005) also found that total director's compensation is positively related to firm size, taking as proxy the log of sales. Moreover, in Germany, Elston and Goldberg (2003) have shown that size is positively related to total director compensation in general, as with previous studies in the United States.

In the Spanish context, Arrondo et al. (2008) found a direct relationship between firm size and total director remuneration, percentage of variable pay and other compensation, with a sample size of 83 non-financial companies.

### **Profitability**

Profitability is a variable that can exert influence over the remuneration levels of management. Performance measures can be related to accounting performance (e.g. return on assets, return on equity) as much as they can to the capital market performance (e.g. Total shareholder return, return on adjusted market).

In fact, there is no consensus on the matter as the empiric evidence is not unanimous (Main et al., 1996; Conyon and Murphy, 2000; Randoy and Nielsen, 2002) and the results obtained depend very much on the variable used to measure them.

In the context of director's remuneration, some authors use the return on assets (ROA), albeit the results are not unanimous. For instance, Angbazo and Narayanan (1997) found that the non-CEO managers' compensation is negatively related to ROA. Unlike, Andreas et al. (2009) for whom a positive relationship exists, though not very strong: an ROA increase of one percentage point will increase compensation levels by only 0.8%.

In the Spanish context, Arrondo et al. (2008) have found a significant and positive relationship between the return on assets and the total compensation of directors.

### **Industry**

This variable has previously been used by authors like Elston and Goldberg (2003), Ryan and Wiggins (2004), Fich and Shivdasani (2005) and Ertugrul and Hedge (2008), among others. These studies have demonstrated that the industry have a significant effect on the determination of the compensation of the board of directors. This is shown in Table 2.

## **MATERIALS AND METHODS**

### **Sample**

The sample included all non-financial listed companies on the Spanish computerized trading system (SIBE) or continuous market

for the period 2004-2009. All finance-related firms (bank, insurance, unit trusts and utilities companies) are excluded from the sample due to their differences in the regulatory requirements, financial reporting standards and compliance, following to Sulong and Mat Nor (2010). So, we are working with a sample of 76 firms on a total of 125 listed companies which represent a broad range of industry sectors (Table 3).

We also estimate the maximum allowable error<sup>9</sup> for a finite population in order to assure the reliability of our conclusions. The maximum error is small, concretely of 7.07% with a level of confidence of 95% (p=5%).

Sources of information were the database of the CNMV, the annual report about corporate governance and annual accounts of each corporation. On occasions it has also been necessary to consult other sources of information, such as the web pages of the corporations, information gathered from the registry of the Madrid Stock Exchange, The Barcelona Stock Exchange or information from the SABI database.

### **Dependent variable (Board of director compensation)**

We have defined different endogenous variables. Our first variable is the total compensation. The total compensation includes the following concepts: fixed and variable remuneration, salary fees, attendance fees, traveling indemnity, stock options and/or other financial instruments, (Kato and Long, 2004; Haid and Yurtoglu, 2006; Crespi and Pascual-Fuster, 2008). Following the standard approach in other studies (Finkelstein and Hambrick, 1989; Boyd, 1994; and, Cheng and Firth, 2005), we applied a logarithmic transformation of the independent variable, to reduce heterocedasticity. In the same way, we have not included remuneration concepts like redundancy payment or insurance premiums, due to their sporadic character and its high amount, which could distort the results and make difficult its interpretation.

The dependent variable has been categorized into two different types of compensation (Angbazo and Narayanan, 1997; Core et al., 1999; Anderson and Bizjak, 2003; Dávila and Peñalva, 2004; Brick et al., 2006; Conyon and He, 2008; Raviv and Landskroner, 2009). This is shown in table 1.

### **Cash pay**

Defined as the sum of fixed and variable remuneration, salary fees, and attendance fees and travelling indemnity.

### **Non cash pay**

This was calculated by the sum of all stock options and/or others financial instruments<sup>10</sup>. We must, however, bear in mind the lack of

<sup>9</sup> Maximum allowable error:  $\varepsilon = Z_{1-\alpha/2} \sqrt{\frac{N-n}{N-1} \frac{pq}{n}}$

Where:  $Z_{1-\alpha/2}$  = z value associated with the degree of confidence  $1-\alpha$ ; N = size of the population; n = size of the sample; p = proportion q = (1-p)

<sup>10</sup> Despite the fact that in the Annual Corporate Governance Report model (Circular 4/2007, of 27 December, CNMV, on the basis of which the model of the annual corporate governance report of listed companies was adjusted) it is recommended that the gathering of information regarding the value of compensation systems be based on the giving of shares and share options, we found that some companies in the sample do not provide this value despite such systems have been established. While it would be possible to manually calculate the value of these compensation systems if the necessary data were to be made available, these companies do not collect such data in their annual accounts either.

**Table 2.** Summary of studies on the determinants of director compensation.

<b>Dependent variable: Director compensation</b>				
<b>Cash (Cash); Non-Cash (Non-Cash) – Performance-based pay; Total Compensation (Total)</b>				
<b>Variable</b>	<b>Previous study</b>	<b>Cash</b>	<b>Non-Cash</b>	<b>Total</b>
Corporate Governance – Board of Directors Characteristics	Boyd (1996)			
	Bryan et al. (2000)			–
Board ownership	Cordeiro et al. (2000)			
	Cheng and Firth (2005)	–		
	Fich and Shivdasani (2005)		–	
	Ertugrul and Hedge (2008)			
CEO and Board Chair duality	Ryan and Wiggins (2004)	+		
	Brick et al. (2006)	+	+	+
	Vafeas (1999)			
	Ertugrul and Hedge (2008)		+	
Outside director	Minnick and Zhao (2009)			
	Ryan and Wiggins (2004)	+		
	Arrondo et al. (2008)			
	Sánchez and Lucas (2008)			–
Board size	Ryan and Wiggins (2004)	+	–	–
	Sánchez and Lucas (2008)			+
	Andreas et al. (2009)			–
<b>Control variable</b>				
	Elston and Goldberg (2003)			
	Ryan and Wiggins (2004)			
	Brick et al. (2006)			+
	Lucas (2009)			
Firm Size	Andreas et al. (2009)			
	Arrondo et al. (2008)	+		+
	Ryan and Wiggins (2004)			
	Ertugrul and Hedge (2008)		+	
	Minnick and Zhao (2009)			
Profitability	Angbazo and Narayanan (1997)			–
	Brick et al. (2006)	+		+
	Arrondo et al. (2009)			
	Andreas et al. (2009)			+
Industry	Schwalbach (1991)			
	Schwalbach and Grasshof (1997)			
	Vafeas (1999)			
	Elston and Goldberg (2004)			
	Fich and Shivdasani (2005)			
	Ertugrul and Hedge (2008)			

importance in our country of "non cash-pay" in relation to the importance it has in other countries. There is also limited information available on share-based compensation systems.

#### **Independent variables**

As independent variables, we have considered a set of factors

**Table 3.** Composition of the population and sample firms according to the industry type.

	Listed companies on the Spanish computerized trading system		Sample	
	N	%	N	%
1. Petrol and energy	20	16,00	11	14.47
2. Basic materials, industry and construction	40	32,00	23	30.26
3. Consumer products	36	28,80	26	34.21
4. Consumer services	20	16,00	11	14.47
5. Technology and Telecommunications	9	7,20	5	6.58
Total	125	100,00	76	100.00

Source: Spanish computerized trading system (SIBE) or Continuous market (<http://www.bolsamadrid.es>).

which determine the structure and level of director compensation. These included measurements of board characteristics, firm characteristics and corporate performance.

#### **Board of directors**

First, in keeping with previous studies (Boyd, 1996; Bryan et al., 2000; Cordeiro et al, 2000; Ertugrul and Hedge, 2008), we included the proportion of shares owned by the board of directors (board ownership, PPCi). Secondly, we included the duality of the chairman of the board and the CEO (PCEi), which is a dummy variable that takes value 1 when both roles are held by the same person, and 0, when they are not (Boyd, 1994; Li, 1994; Conyon and He, 2008). Thirdly, the proportion of external board members (OTSi), measured as the ratio between the numbers of independent external board members to the total number of members on the board of directors. Finally, we considered the board size (NMCAi) as the total number of members on the board (Core et al., 1999; Mínguez and Martín, 2003; Larcker et al., 2007; Coles et al., 2008; Conyon and He, 2008; Sánchez and Lucas, 2008).

#### **Control variables**

The firm size was measured as log of total assets (SIZi) (Baker et al., 1988; Smith and Watts, 1992; Mehran, 1995; Core et al., 1999; Elston and Goldberg, 2003; Barontini and Bozzi, 2008). As a measurement of corporate performance we have taken the return on assets (ROAi) (Elston and Goldberg, 2003; Cheng and Firth, 2005; Lin, 2005) as the ratio between EBITDA to total assets. The third control variable is the industry (INDi) (Schwalbach, 1991; Schwalbach and Grasshoff, 1997; Elston and Goldberg, 2003 and Cole and Mehran, 2007) which has been categorized into five groups, following the approach established for the companies listed on any Spanish Stock Exchange (Oil and energy; Basic Materials, Manufacturing and construction; consumer goods; consumer services and technology and telecommunications).

## **RESULTS**

### **Descriptive statistics**

The descriptive analysis for the payments received by members of the board is shown in Table 4. This table shows a summary of statistics on director compensation

measured in Euros. The total compensation includes the following concepts: fixed and variable remuneration, salary fees, attendance fees, travelling indemnity, stock options and/or other financial instruments. Cash Pay is defined as the sum of fixed and variable remuneration, salary fees, attendance fees, travelling indemnity. Non-Cash Pay is equal to the sum of all stock options and/or other financial instruments.

The average remuneration received by each member of the board of directors is €143,315.20 for 2004 and € 216,502.30 for 2009, this represent a rate of inter-annual growth of 8.6% since 2004. These results are in contrast to the problems suffered by the rest of the economy over the past two years, hence the understandable interest that the analysis of the determinants of payments received by directors has aroused.

This tendency is followed by cash compensations, which represent a large proportion of the total compensation received. By contrast, share-based payments show a variable behavior which, in terms of gross, works out at an inter-annual reduction of approximately 11%, from an average of €6,634.51 in 2004 to €3,710.27 in 2009. This behavior shows that companies design compensation systems in such a way so that they perform best for the firm's directors, increasing cash flow in those moments when the stock performance may be lower as a result of the economic situation.

The statistical behaviour of the independent variables is shown in Table 5.

The average percentage of control owned by boards of directors is 23.6%. These results coincide with the average of 23.64% obtained by Arrondo et al. (2008) for the Spanish market in the year 2005 but other previous studies are overcome. In this sense, Fernandez et al. (1998) obtained a rate of 7% for the year 1993 and Mínguez and Martín (2003) obtained an average participation of 13.6% for 1999.

In connection with the duality of chairman and CEO (as roles being performed by same person), the results showed this to be the case that in 64.3% of the cases that were looked at. The size of the board of directors on

**Table 4.** Descriptive statistics on board of director compensation and correlation matrix.

Panel A: Level of board compensation						
Variable	2004	2005	2006	2007	2008	2009
<b>Total director compensation</b>						
Mean	143315.20	154226.60	198762.90	209733.40	213597.50	216502.30
Rate of change (%)		7.61	28.88	5.52	1.84	1.34
St. dev.	125235.70	134775.90	209538.80	195094.50	195025.50	209284.50
Minimum	17888.89	0	14250.00	17142.86	15857.14	14555.56
Maximum	686428.60	686833.30	1257800.00	937000.00	877764.70	1134353.00
<b>Cash pay compensation</b>						
Mean	136680.70	147400.40	193906.40	201781.40	210328.80	212792.00
Rate of change (%)		7.84	31.55	4.06	4.24	1.17
St. dev.	115081.10	118565.30	204241.20	194604.10	194307.10	198344.60
Minimum	17888.89	0	14250.00	17142.86	15857.14	14555.56
Maximum	686428.60	566176.50	1257800.00	937000.00	877764.70	933352.90
<b>Non-cash pay compensation</b>						
Mean	6634.51	6826.19	4856.53	7951.93	3268.73	3710.27
Rate of change (%)		2.89	-28.85	63.74	-58.89	13.51
St. dev.	44595.03	41428.46	25570.88	37964.15	14814.14	23298.72
Minimum	0	0	0	0	0	0
Maximum	375555.60	343750.00	193333.30	251222.20	104400.00	201000.00

  

Panel B									
	LnTC	LnCASH	LnNO_CASH	PPC	PCE	OTS	NMCA	SIZ	ROA
LnCASH	0.996***								
LnNO_CASH	0.500*	0.148							
PPC	-0.203***	-0.167***	-0.042						
PCE	0.212***	0.224***	0.298*	-0.037					
OTS	-0.048	-0.038	0.020	-0.228***	0.040				
NMCA	0.435***	0.436***	0.019	-0.074	0.119***	-0.087			
SIZ	0.580***	0.603***	0.020	-0.123***	0.170***	-0.028	0.617***		
ROA	0.281***	0.186***	0.280	-0.045	0.064	-0.159***	0.105**	0.117**	
IND	-0.150**	-0.133***	-0.143	0.139***	-0.181***	0.024	0.003	-0.051	-0.037

\*, The correlation is significant at 0.001 (bilateral); \*\*, the correlation is significant at  $\pm 0.05$  (bilateral); \*\*\*, the correlation is significant at 0,01 (bilateral).

**LnCASH**, Natural logarithm of the cash pay compensation; **LnNOCASH**, natural logarithm of the non-cash pay compensation; **LnTC**, natural logarithm of the total compensation; **PPC**, percentage of shares owned by the members of the board of directors; **PCE**, dummy variable with value 1 when the president of the company is the same that the president of the board of directors and 0 in other cases; **OTS**, number of external members over the total number of the board of directors; **NMCA**, total number of members of the Board of Directors; **SIZ**, size of the business measured like the natural logarithm of total asset; **ROA**, return on assets; **IND**, industry.

average is 11.25 members, a result that is close to those obtained by other Spanish studies, such as Fernández et al. (1998), Sanchez and Lucas (2008) and Crespi and Pascual-Fuster (2008), who obtain an averages of 10.75 (1993), 11 (2005 and 2006) and 10.9 (2004, 2005 and 2006), respectively. Along the same lines, recent studies relating to the U.S. market, such as those of Coles et al. (2008) or Fahlenbrach (2009), obtained an average of 10.4 (1992-2001) and 9.8 (1993-2004) members on the

board of directors. The results of our study therefore show that boards of directors in Spanish businesses tend to be greater in size. In fact, further analysis of this variable reveals that the size of the board can be very large indeed with the maximum of these running to 24 board members in size.

In relation to the presence of independent outsiders on the board of directors, an average of 35.6% was obtained. This result is close to those obtained by

**Table 5.** Descriptive summary statistics on panel data variables.

Variable	Media	St. Dev.	Minimum	Maximum
<b>Director's compensation</b>				
Cash pay compensation (LnCASCH)	9.341	0.860	7.327	11.742
Non-cash compensation (LnNOCASH)	7.703	1.692	4.123	10.639
Total director compensation (LnTC)	9.365	0.869	7.327	11.742
<b>Corporate governance – Board of director characteristic</b>				
Board ownership (PPC)	0.236	0.255	0.000	0.9934
CEO and board chair duality (PCE)	0.643	0.480	0.000	1.000
Outside directors (OTS).	0.356	0.187	0.000	0.857
Board size (NMCA)	11.252	3.978	3.000	24.000
<b>Control variable</b>				
Size (SIZ)	20.204	1.786	16.447	25.144
Profitability (ROA)	0.032	0.117	-1.062	0.472

LnCASCH, Natural logarithm of the cash pay compensation; LnNOCASH, natural logarithm of the non-cash pay compensation; LnTC, natural logarithm of the total compensation; PPC, percentage of shares owned by the members of the board of directors; PCE, dummy variable with value 1 when the president of the company is the same that the president of the board of directors and 0 in other cases; OTS, number of external members over the total number of the board of directors; NMCA, total number of members of the board of directors; SIZ, size of the business measured like the natural logarithm of total asset; ROA, return on assets.

Arrondo et al. (2008), which was also in reference to the Spanish market (35.35%) and those of Conyon and He (2008) for the Chinese market (34.4%). However, the results differ from those of Fahlenbrach (2009), with findings that obtained an average of 73.2% overall for outside directors within the American market, and Weir and Laing (2001), with an average of 47% for the UK market.

### Econometric models

Multivariate analysis was used to examine the effects that board of directors' characteristics might have upon the level and structure of remuneration to directors. To this, we used the panel data methodology which is applied on multiple phenomena observed over multiple periods for the same firms or individuals (Hsiao and Lightwood, 1994). This allows us to take into consideration an unobservable but constant heterogeneity because it is a common problem when we have to identify the effect of corporate governance mechanisms over the board's compensation (Elsas and Florysiak, 2008; Andreas et al., 2009; Mayers and Smith, 2010). Following this methodology, we developed a data sample size 456 (76 companies × 6 years) which is a short (T=6), lineal and strongly balanced panel.

In accordance with what has been put forward, we have estimated different variants of the following model of panel data<sup>11</sup>:

$$y_{it} = \alpha + \sum_{k=1}^4 \beta X_{it} + \sum_{m=1}^2 \beta CV_{it} + u_i + \varepsilon_{it} \quad (1)$$

where  $y_{it}$  is the endogenous variable (logarithm of total

remuneration by director);  $\sum_{k=1}^4 \beta X_{it}$  are independent variables, where k is board ownership (PPC<sub>it</sub>), duality of the chairman of the board and the CEO (PCE<sub>it</sub>), proportion of external board members (OTS<sub>it</sub>), board size

(NMCA<sub>it</sub>);  $\sum_{m=1}^2 \beta CV_{it}$  are control variables, where m is firm

size (SIZ<sub>it</sub>), and return on assets (ROA<sub>it</sub>), and  $u_i$  is the individual error component and  $\varepsilon_{it}$  is the idiosyncratic error. We also have included annual and industry dummies to control for temporal and activity effects.

Therefore, three variants of the model were estimated based on the remuneration measurement, called "total compensation" (model 1), "cash compensation" (model 2) and "no-cash compensation" (model 3).

In terms of our hypotheses we expect that  $\beta_1 < 0$ ,  $\beta_1^{CASH} < 0$ , and  $\beta_1^{NO\_CASH} < 0$  (H<sub>1</sub>). We also expect a negative relationship between proportion of external board member and compensation by director (H<sub>3</sub> =  $\beta_3 < 0$ ,  $\beta_3^{CASH} < 0$ ,  $\beta_3^{NO\_CASH} < 0$ ) indicating that more independence in the Board has a moderate effect over the amount of compensation perceived by them. Contrarily, we foresee a positive relationship between duality (H<sub>2</sub> =  $\beta_2 > 0$ ,  $\beta_2^{CASH} > 0$ ,  $\beta_2^{NO\_CASH} > 0$ ) and compensation by director.

Instead, we don't expect a specific relationship board

<sup>11</sup> We assumed parameter homogeneity, which means that  $\alpha_{it} = \alpha$  for all i,t and  $\beta_{it} = \beta$  for all i,t.

size and compensation ( $H4 = \beta_4 > 0$  or  $\beta_4 < 0$ ,  $\beta_4^{CASH} > 0$  or  $\beta_4^{CASH} < 0$ ,  $\beta_4^{NO\_CASH} > 0$  or  $\beta_4^{NO\_CASH} < 0$ ).

Fixed and random effects were selected as techniques to test our hypothesis. To evaluate the importance of both methodologies we used the Hausman test (1978). This test checks the absence of correlation between the individual effects and the independent variables, so when the null hypothesis is not rejected it indicates a higher degree of efficiency in the estimation, what leads to the use of the random effects model (Croissant and Millo, 2008; Andreas et al., 2009). As a result, a fixed effect model appears to be the most suitable methodological tool in the case of the "total compensation" model, and the random effects methodology results more appropriate for models of remuneration in cash and non cash payments (Table 6).

In addition, we have re-estimated all the models considering the corrections over panel data proposed by Arellano and Bond (1991) and Blundell and Bond (1998) in order to overcome the problems of heterogeneity and endogeneity in our model. Therefore, we applied the GMM-system using a two-steps estimator, so that the estimators of these models are efficient and asymptotically robust in the presence of heteroscedasticity. This is shown in Table 7.

## DISCUSSION OF RESULTS

Table 6 display the impact of characteristics of the board (PPC, PCE, OTS and NMCA) on the level of total compensation (Panel A), Cash-Pay compensation (Panel B) and Non-Cash Pay compensation (Panel C). Random or fixed effects are shown, depending on the value obtained for Hausman's test. Industry dummies are included in all models.

The results show (Table 6, Panel A) a significant and negative relationship between the percentage of shares owned by PPC and the compensation received by them (coeff. -0.489). This is consistent with the results obtained by previous studies (Boyd, 1996; Bryan et al., 2000; Cordeiro et al., 2000). These results support the point of view which holds that the ownership of shares downplays motivation exerted by the compensation, since they already receive cash payments though dividends from the shares they hold. It is therefore noted that the ownership of shares is a proper corporate governance control device over compensation received by board members for Spanish listed companies, in line with the theoretical approaches developed by the agency theory which advocates it as a way to align board directors' interests with those of shareholders.

Also, the NMCA (coeff. -0.040) and presence of independent OTS (coeff. -0.305) have a significant negative effect on compensation level. These results show that, first, a large board reduces the discretion of its members, resulting in lower levels of compensation,

and secondly, it reinforces the idea that independent directors are more effective in the pursuit of shareholder interests, exerting a positive influence on wage moderation in the Board of Directors (Andreas et al., 2009, Ryan and Wiggins, 2004).

By contrast, the variable representing the concentration of powers of the PCE in the same person is significant (coeff. 0.292) and it has a positive relationship on the level of remuneration of board members as previous studies show (Brick et al., 2006). These results highlight the importance of separating these two figures in order to moderate the remuneration of directors, an idea that is consistent with the recommendations contained in the reports and codes of good governance that have been enacted in Spain.

Regarding the variables related to firm characteristics, size (LnAT) correlates with the level of remuneration (coeff. 0.092), as is the case in previous studies, such as Elston and Goldberg (2003), Ryan and Wiggins (2004), Brick et al. (2006), Lucas (2009) and Andreas et al., (2009), among others. However, there was no significant relationship between pay and profitability ROA, which reveals that the compensation awarded to directors is not, in this case, related to the good or bad performance of the company, hence the criticism that this has come under.

For the model developed on cash remuneration (Table 6, Panel B), the results coincide with the previous model, as we found a significant positive relationship between the remuneration of the board and the PCE variable (coeff. 0.191) and LnAT (coeff. 0.109) and a negative relationship with PPC (coeff. -0.275) and OTS (coeff. -0.364).

Finally, in the model developed for share-based payments (Table 6, Panel C) PPC (coeff.-5.812), PCE (coeff. 1.476), LnAT (coeff. -0.856) and ROA (coeff. 37.719) variables are significant. The relationship between profitability and stock-based compensation is justified by the fact that in many cases, the granting of such compensation plans are based on achieving certain levels of this or other financial indicators for the smooth running of the company.

When analysing the coefficients for independent variables in those linear models estimated with System-GMM methodology (Table 7), the coefficients for the non-cash pay model change to non-significant, revealing the importance of sample size limitation and the effects that arise from simultaneous causality among variables under analysis. Table 7 display the impact of characteristics of the board (PPC, PCE, OTS and NMCA) on the level of total compensation (Panel A) and Cash-Pay compensation (Panel B). For this reason neither proposed hypotheses are upheld.

Furthermore, the results of this last contrast confirm the above-mentioned relationships for the independent variables except to ROA for cash-pay model (Table 8), thus showing a significant and positive relationship

**Table 6.** Estimation, OLS, fixed and random effects.

	Expected sign	Panel A		Panel B	Panel C
		Total director compensation		Cash pay compensation	Non-cash pay compensation
		(1)	(1)	(2)	(3)
		OLS	Fixed effect	Random effect	Random effect
PPC	-	-0.372 (-2.47)**	-0.489 (-2.89)***	-0.275 (-1.86)*	-5.812 (-2.81)***
PCE	+	0.224 (3.50)***	0.292 (4.30)***	0.191 (3.04)***	1.476 (1.83)*
OTS	-	-0.377 (-2.27)**	-0.305 (-1.70)*	-0.364 (-2.23)**	-1.677 (-0.45)
NMCA	?	-0.017 (-1.46)	-0.040 (-3.07)***	-0.016 (-1.37)	-0.183 (-1.44)
LnAT	+	0.099 (3.15)***	0.092 (2.58)**	0.109 (3.53)***	-0.856 (-2.26)**
ROA	+	0.405 (1.62)	0.228 (0.86)	0.428 (1.74)*	37.719 (3.81)***
Intercept		12.076 (17.05)***	10.363 (14.34)***	10.131 (15.09)***	32.178 (4.33)***
Industry (dummies)		Yes		Yes	Yes
Hausman test			39.83***	9.13	3.10
F test			10.50*** [11, 363]		
Wald Chi <sup>2</sup>		133.57 (15)*		132.97 (15)***	29.18 (15)**
R <sup>2</sup>					
Within		0.2138	0.1132	0.2046	0.1671
Between		0.3238	0.1121	0.3529	0.9645
Overall		0.3171	0.1195	0.3396	0.6185
No. of firms		76	46	76	15
No. of observations		450	450	450	34

\*significant level at 10%; \*\*significant level at 5%; \*\*\*significant level at 1%.

between PCE and LnAT dependent variables and the independent variables (Total Director Compensation and Cash-Pay compensation). Table 8 summarizes the findings obtained about the influence of board characteristic on level of remuneration received by them.

By contrast, these results show inverse relationship between PPC and OTS dependent variables and the variables representative of compensation by director.

## Conclusion

Currently, the lack of investor confidence in the directors,

regarding to their independence and the extraction of wealth to minority shareholders has not been able to be alleviated, due to the fact that the compensation levels of directors are still object of criticism, especially over the last few years. In this sense, the data of this work revealed significant increases in remuneration in recent years despite of the current financial and economic difficulties.

Therefore, the absence or failure of some mechanisms of corporate governance furnishes to board members the possibility of establishing a reward system more suitable to their own personal interests rather than to those of the investors. Nowadays, this problem has intensified the

**Table 7.** Estimation, system-GMM in two steps.

	Expected sign	Panel A	Panel B
		Total director compensation (4)	Cash pay compensation (5)
LnRetribution_1		0.568*** (12.26)	0.611*** (12.82)
PPC	-	-0.246*** (-2.75)	-0.145** (-2.01)
PCE	+	0.122*** (3.69)	0.069* (1.66)
OTS	-	-0.376*** (-2.83)	-0.461*** (-3.08)
NMCA	-	-0.022** (-2.22)	-0.016 (-1.48)
LnAT	+	0.035* (1.76)	0.073*** (2.60)
ROA	+	0.094 (0.26)	-0.081 (-0.24)
Intercept		4.783*** (8.03)	3.437*** (6.92)
Overidentifying test			
Sargan		34.011 (0.238)	41.068 (0.068)
Autocorrelation test			
AR(1)		-2.928**	-2.9662**
AR(2)		-0.600	0.501

Models are run with the System-GMM methods. \*. significance level at 10%; \*\*. significance level at 5%; \*\*\*, significance level at 1%.

**Table 8.** Summary of findings. Nature of the impact of board of directors' characteristics on the board compensation.

Impact	Total director compensation	Cash pay compensation	Non-cash pay compensation
+	PCE	PCE	PCE <sup>a</sup>
	LnAT	LnAT	ROA <sup>a</sup>
		ROA <sup>a</sup>	
-	PPC	PPC	PPC <sup>a</sup>
	OTS	OTS	LnAT <sup>a</sup>
	NMCA		

<sup>a</sup> Non significant results when System-GMM method are used.

lack of investor confidence in their advisers.

From a theoretical point of view, the composition and structure of the board of directors are important control mechanisms of their compensation. Consequently, aspects such as the size of the board, the addition of independent directors, separation of the roles of CEO and chairman of the board or the alignment of interests of directors and shareholders, through the participation of the prior in the capital company, are necessary mechanisms to ensure compliance with the control functions assigned to board members.

Empirical evidence focuses on analyzing the relationship between the characteristics of the board of directors and the remuneration of the CEO. However, the compensation of directors as resource of expropriation of wealth from shareholders, and their interaction with other corporate governance mechanisms is less studied.

In an extension of previous studies, the present work has analyzed the effectiveness of those mechanisms of corporate governance on control of the level of remuneration of the members of the board of directors with a sample of 76 Spanish listed firms for the period 2004 to 2009. The results showed a significant relationship between composition and structure of the board of directors and their remuneration, which is consistent with the theoretical approaches developed by the agency theory. Control mechanisms like the separation of the figures of chairman and chief executive, the shareholding of board members, and the percentage of independent directors were found to be significant in reducing the levels of remuneration of the board, specifically, cash payments received by them.

In short, the results of this work showed that the corporate governance control is efficient in order to avoid the excessive compensation, but the fact of not getting the desired goals could be because the recommendations are not being followed. As an example, the results revealed that the percentage of outsiders in the board is around 36% while in the American market this percentage reached 73%.

About that, Spanish regulators have been especially active in this context, by using a Unified Code of good governance which included recommendations about this issue. However, the results of this work give reasons to regulators and investors, of concentrated ownership context, to be aware about the importance of board's characteristics as corporate control mechanisms over the directors' remuneration. This raises the question whether is it necessary to establish other mechanisms to exercise control over the board of directors - for example a Supervisory Board as is the case in Germany - and, more importantly, whether these mechanisms should be enforced, in order to control the level of remuneration received by board members.

Finally, it is noted that this study has some limitations mainly related to problems associated with obtaining information. The methodology should be complemented by other type of analyses, such as the influence of the

characteristics of the board on the remuneration structure in a greater level of disaggregation which can provide to regulators and investors with basic and primary information about the board discretion level on their own remuneration. So, the breakdown of individualized payments for each member of the Board of Directors proposed by the new legislative context in Spain could be an important source of information to extend the results of this study.

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