

## **Is Board Gender Diversity a Driver of CEO Compensation?: Examining the Leadership Style of Institutional Women Directors**

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### **Abstract**

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In this investigation, we aim at examining the influence of institutional female directors on CEO compensation. Specifically, we investigate the impact of institutional female directors as a whole, differentiating by whether female directors have business ties with the firms' boards on which they sit (pressure-sensitive female directors) or do not have business links (pressure-resistant female directors). We hypothesize that there is a nonlinear association, specifically quadratic, between institutional, pressure-resistant and pressure-sensitive female directors on boards, and CEO compensation. Our findings show that CEO compensation decreases with low levels of institutional female directors and pressure-resistant female directors on boards, but when their presence on boards increases beyond a certain threshold, CEO compensation also increases. We also find that CEO compensation is not affected by pressure-sensitive female directors on boards. These findings support the premise that institutional female directors on boards cannot be considered a homogeneous group, but play an important role in managerial monitoring and remuneration policies, thus affecting the corporate governance system.

### **Key words**

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Board gender diversity, CEO compensation, institutional women directors, pressure-sensitive women directors, pressure-resistant women directors

## **Introduction**

Past research (O'Reilly & Main, 2010; Reddy, Abidin, & You, 2015) provides evidence that corporate governance mechanisms influence CEO

compensation. Some scholars suggest that CEO compensation may help to reduce agency conflicts between executives and shareholders (Spraggon & Bodolica, 2011; Tosi, Werner, Katz, & Gomez-Mejia, 2000) and may resolve problems associated with monitoring executives (Sanders & Carpenter, 1998).

In countries with civil law like Spain, where investor protection law is weak, the main agency problems in firms are the expropriation of minority shareholders' wealth by large shareholders (Shleifer & Vishny, 1997), the board system is one-tier (all directors, non-executives, and executives make up one board), and there is a high ownership concentration; listed firms are characterized by corporate boards with the highest presence of controlling shareholders, known as institutional investors, in contrast to the Anglo-American context where it is less common that institutional investors appoint directors to the board. In regard to this situation, Heidrick (2011) reports that directors appointed by institutional investors account for 40 percent of directorships in Spain, while they only account for 2 percent of British firms' directorships. Institutional directors on boards, who represent institutional investors considered dominant shareholders, play a significant role as they maximize the interests of their shareholders.

Institutional directors, owing to their different capacity to connect in corporate governance and their different attitudes toward the problems of firms' governance, cannot be considered a monolithic group. In this sense, according to Almazán, Hartzell, and Starks (2005), Chen, Harford, and Li (2007), and Pucheta-Martínez and García-Meca (2014), among others, institutional directors can be differentiated as pressure-sensitive directors (who maintain business relationships representing banks and insurance companies with the company on whose boards they sit) or pressure-resistant directors (who have no potential business relationship with the companies in which they hold a directorship representing investment, pension, and mutual funds). Therefore, directors representing institutional investors are likely not to show homogeneous behavior and may take different decisions, depending on the characteristics of the institutional investors they represent.

Previous research also highlights the role played by gender diversity on corporate governance (Terjesen, Sealy, & Singh, 2009), focusing on the improvement of the supervisory function and the decision-making efficiency of the board (Lucas-Pérez, Mínguez-Vera, Baixauli-Soler, Martín-Ugedo, &

Sánchez-Marín, 2015; Nielsen & Huse, 2010). According to past literature, institutional female directors have an important influence on earnings quality (Johnson & Greening, 1999) and investment opportunities (Loukil & Yousfi, 2015). However, academic literature on CEO compensation has paid little attention to female directors, and particularly institutional female directors.

Thus, the goal of this study is to analyze how institutional female directors on boards have an impact on CEO compensation. We also analyze this relationship by making a distinction between pressure-sensitive institutional female directors and pressure-resistant institutional female directors.

Our paper makes several contributions to the literature. First, our findings support the thesis that institutional female directors cannot be considered a uniform group in line with past literature (Almazán et al., 2005; Chen et al., 2007). Thus, this study extends previous research about the role of institutional investors in Spain, a context where the proportion of institutional investors on boards is higher than other countries such as the U.K. and U.S. Second, we find evidence that institutional female directors are more effective on boards than independent directors in affecting the governance system. Hence, we contribute to the corporate governance literature by demonstrating that effective institutional structures play an important role in managerial monitoring and remuneration policies, and thus affect the association between institutional female directors and CEO compensation. Third, we provide empirical evidence that there is a curvilinear relationship between institutional female directors and CEO compensation. In Spanish firms, the *contest* hypothesis prevails when companies are characterized by low levels of institutional female directors and pressure-resistant female directors on boards, while at high levels, the *collusion* hypothesis prevails. Fourth, our study is, to the best of our knowledge, the first to analyze the relationship between pressure-resistant and pressure-sensitive institutional female directors on boards and CEO compensation in a Spanish context. This paper may be considered a tool to explain the overall relationship between Spanish institutional female directors and CEO compensation, depending on the nature of their relationships with firms, as it provides a deeper understanding of the role of institutional female directors on CEO compensation.

The Spanish setting offers a relevant opportunity to explore the impact of institutional women directors on CEO compensation, given the charac-

teristics of the corporate governance system and the strong influence of remuneration practices between firms. The Spanish Conthe Code or Unified Code of Corporate Governance (CUBG, 2006) published in 2006, and updated in 2015, helps to regulate or recommend the presence of female directors in decision-making bodies. To improve the low presence of female directors on boards, the Spanish parliament approved the Ley Orgánica Para la Igualdad Efectiva de Mujeres y Hombres (LOIMH, 2007), 3/2007 on March 22, 2007, which called for effective equality between women and men of 40% by 2015. Given that listed firms have not yet reached this quota, the Conthe Code (CUBG, 2015) recommends that the female presence on corporate boards should be at least 30% before 2020 (see Moon, Chun, Kim, & Kim, 2008).

The remainder of this paper is organized as follows. We next provide the literature review followed by Section 3, which offers the method. Section 4 describes our results, and Section 5 presents the discussion and conclusions.

## Literature Review

Agency theory posits that the separation between the principals (shareholders) and the agents (managers and directors) of the firm generates information asymmetries between the parties, thus creating agency problems (Jensen & Meckling, 1976). To mitigate agency problems, owners have used compensation policy as a mechanism to monitor executives and align their interests with those of the company (Dong & Ozkan, 2008). Thus, companies elaborate an efficient compensation policy to motivate managers and directors.

The shareholders' main watchdog in the companies is the board, which is responsible for supervising the most important corporate decisions such as the design of executive remunerations (Jensen & Murphy, 1990); it is also a relevant mechanism to oversee managerial actions (Fama & Jensen, 1983) and to improve the effectiveness of board monitoring. The non-executive directors (external directors) will act independently from the executive directors (internal directors) and will act as good monitors for shareholders' interests (Armstrong, Guay, & Weber, 2010). Given that managers are often driven by their self-interests, large shareholders, such as institutional investors, can monitor managerial action, thus reducing the agency conflicts

and the necessity to grant long-term incentives to align interests between managers and shareholders (Del Guercio & Hawkins, 1999).

Institutional directors on boards have come to play an active role in monitoring managers in contrast to the passive role they traditionally performed. Specifically, they have been considered a key mechanism to improve corporate performance (Agarwal, Erel, Ferreira, & Matos, 2011), monitor management behavior (Del Guercio & Hawkins, 1999), and control excessive compensations (Gillan & Starks, 2000; Hartzell & Starks, 2003). In this respect, institutional directors have the motivation, expertise, resources, and duty to monitor CEO compensation. Thus, institutional investors provide better governance in setting a compensation policy than do smaller investors.

Prior evidence of the impact of institutional directors on CEO compensation is mixed. Some authors (Almazán et al., 2005; Conyon, 2014) show that institutional investors reduce CEO remuneration owing to the fact that they are effective in monitoring management behavior. As a consequence, they are not sensitive to management incentive problems and cannot adopt more aggressive compensation; however, others (Balasubramanian, Barua, & Karthik, 2015; Chen, Yi, & Lin, 2013; Croci, Gonenc & Ozkan, 2012; Kang & Liu, 2008) report a positive influence on CEO compensation, as institutional investors attempt to align the interests of CEOs and shareholders by offering high CEO compensation. Overpaid CEOs will be incentivized to do the best for the firm by taking steps to increase firm value for shareholders. In this way, the interests of CEOs and shareholders will move in the same direction (e.g., Pattarin, Alon, & Zhang, 2011).

The agency approach also argues that females on boards might monitor management teams (Carter, D'Souza, Simkins, & Simpson, 2010) to reduce information asymmetries and agency costs (Wellalage & Locke, 2013). In this respect, past literature finds that women directors, such as institutional female directors, affect corporate performance (Pucheta-Martínez, Bel-Oms, & Olcina-Sempere, 2016) and dividend payments (Van Pelt, 2013), among other things. Hence, board gender diversity may also affect executive compensation (Lucas-Pérez et al., 2015; O'Reilly & Main, 2012).

In this sense, authors like Bugeja, Matolcsy and Spiropoulos (2016), among others, demonstrate a negative relationship between female directors on compensation committees and CEO pay. This supports the thesis that institutional female directors on boards may negatively influence CEO compensation because they are more risk averse in financial decision-making

(Byrnes, Miller, & Schafer, 1999), bring different perspectives to the boardroom, and develop a more trusting leadership style than men (Trinidad & Normore, 2005). Therefore, the presence of female directors on boards reduces opportunistic behaviors and leads to the exercise of greater control over CEO pay. Female directors are more rigorous in monitoring activities and may not accept an excess of executive compensation in firms. Nevertheless, there are some aspects of female directors that could increase CEO compensation. In this sense, O'Reilly and Main (2010) show that female directors are more generous and have less business experience and background than male directors; therefore, they can be convinced by CEOs to award more remuneration. According to this evidence, the presence of institutional female directors on boards may influence board decisions, such as increasing CEO compensation and, consequently, the monitoring role of female directors may be less effective. Therefore, our evidence may support the idea that institutional female directors have a positive impact on CEO compensation because female directors may have problems with primary decision-making regarding certain issues, such as executive compensation. Knott (2015), and O'Reilly and Main (2010, 2012) find that female directors on corporate boards have a positive impact on CEO compensation.

Hence, whereas the monitoring hypothesis (a negative relation between institutional directors and CEO compensation) is supported by Almazán et al. (2005) and Khan, Dharwadkar and Brandes (2005) and others, the entrenchment hypothesis (a positive relation between institutional directors and CEO compensation) is evidenced by Croci et al. (2012), and Feng, Ghosh, and He (2010). Nevertheless, unlike previous literature that demonstrates a linear relationship between institutional directors and CEO compensation, Brewer (1991) puts forward the theory of optimal distinctiveness, according to which both low and high percentages of demographic features (gender diversity and institutional directors) within a collective (board of directors) result in more negative effects (increases in CEO compensation), while more positive effects (decreases in CEO compensation) can occur when a balanced proportion of features exists that support a specifically quadratic nonlinear association. This suggests that the impact of group structure is probably nonlinear.

Consistent with this idea is the social identity approach, which posits that when a heterogeneous group interacts within a collective (a board), it may affect group outcomes because of coalitions, alliances, disputes, or

disagreements. Board gender diversity can be considered a demographic characteristic that individuals employ to classify themselves and others into social collectives: the in-group (where the same demographic collective shares the board of directors) or the out-group (dissimilar demographic collectives share the board of directors), and where individuals who are part of the out-group have more difficulty in joining the in-group (Tajfel & Turner, 2004). Furthermore, psychological and social identity perspectives argue that in-group individuals might consider themselves more influential than out-group individuals and, therefore, the behavior of in-group individuals in relation to out-group individuals will be unfavorable. These theoretical approaches posit that there is an interaction between members of their own identity group rather than with out-group members, as the intergroup members are considered more trustworthy, honest, and cooperative, and tend to assess the competencies and abilities of their individuals more positively than the out-group members (Kramer, 1991; Tajfel, 1982). Joshi and Jackson (2003) have also demonstrated that in-group members behave in a more cooperative way because they tend to share interests and objectives. Thus, as the presence of institutional female directors increases on boards, they will make up an in-group in order to behave in a supportive way, thus improving intergroup cohesion and decreasing intergroup disagreement. This constructive intergroup interaction may impact negatively on CEO pay—a positive outcome.

However, cooperative behaviors among directors may change to competitive behaviors and, as a consequence, may appear as conflicts when directors are classified as the in- or out-group (Joshi & Jackson, 2003). The differences between groups may generate negative behaviors in members of a low-status group (gender diversity or ethnic minorities) about their collective identity (Hornsey & Hogg, 1999). These adverse behaviors cause problems in the in-group interactions and, consequently, may lead to a decrease of firm value or an increase in CEO compensation. Thus, there will be a tipping point that will change the correlation of internal aspects of the board, causing the intergroup conflict of board members to have an influence (Ali, Ng, & Kulik, 2014). Beyond this critical point, the addition of more institutional female directors with different personalities and social competences within the same group (boards) could cause divergent processes and dissatisfaction within the organization, resulting in a negative outcome (increases on CEO pay).

We extend this view to the relationship between institutional women directors and CEO compensation. Thus, as the proportion of institutional female directors on boards increases, CEO compensation will reduce (positive consequence), but when the presence of female directors exceeds a certain threshold, the inclusion of additional women directors on boards will increase CEO pay (negative consequence). Consequently, this premise suggests that there is a nonlinear association, specifically a curvilinear one, between institutional women directors and CEO remuneration.

Prior research, to the best of our knowledge, has not hypothesized a nonlinear relationship between institutional female directors and CEO pay. Extending the arguments above to boards' gender diversity, we expect a nonlinear relationship between institutional women directors on boards and CEO compensation and, accordingly, we propose the following hypothesis:

*H1:* CEO pay is negatively affected by institutional women directors on boards, but when their presence on boards exceeds a certain threshold, CEO pay is positively affected.

Past research shows that institutional directors are a key mechanism that influences decision-making bodies, but not all are equally willing or able to serve this function (Almazán et al., 2005). Accordingly, this evidence indicates that business relationships with the company on whose boards they sit may have an effect on the preferences and incentives of the institutional directors to control corporate decisions. Thus, institutional directors cannot be considered a uniform group, owing to their different incentives, abilities, and attitudes toward engaging in corporate governance (Almazán et al., 2005; Cornett, Marcus, Saunders, & Tehranian, 2007; Jara-Bertín, López-Iturriaga, & López de Foronda, 2012; López-Iturriaga, García-Meca, & Tejerina-Gaite, 2015). In this respect, most authors identify two groups of directors, according to their business goals: pressure-sensitive and pressure-resistant institutional directors (Bhattacharya & Graham, 2007; Dong & Ozkan, 2008).

Pressure-sensitive institutional directors (banks and insurance companies) represent investors who have existing or potential business ties with firms where they invest. As they attempt to do business with firms, they are subject to managerial pressure and have limitations in monitoring the organizations. On the other hand, pressure-resistant institutional directors (mutual funds, investment funds, pension funds, and venture capital firms)



have no business links with firms where those whom they represent invest. They do not face any monitoring obstacles, have a more independent position in the firm, and can successfully monitor corporate managers (Jara-Bertín et al., 2012; Pucheta-Martínez & García-Meca, 2014).

Pressure-sensitive institutional directors may lack the incentives or ability to effectively monitor managers, although they can mitigate agency conflict through higher levels of executive compensation (Almazán et al., 2005; Khan et al., 2005). As mentioned previously, increases in CEO pay may result in better firm performance and thus both shareholders and managers may align their interests. Pressure-sensitive investors are in a dependent position from the companies as they maintain commercial ties and, therefore, they will be likely to increase CEO compensation in order to keep and secure their business ties (David, Kochar, & Levitas, 1998). They have strict fiduciary standards and prefer short-term earnings, thus they prefer to invest according to short-term horizons. López-Iturriaga et al. (2015) and Shin and Seo (2011) report a positive association between pressure-sensitive institutional directors and CEO compensation. However, when these directors reach a certain level, they may develop a more active role in the governance of firms, which could negatively affect CEO compensation. In this case, large shareholders, like banks or insurance companies, may create coalitions in order to take out private benefits (Jara-Bertín, López-Iturriaga, & López de Foronda, 2008). Thus, as there is a greater presence of pressure-sensitive directors on boards, they may be interested in preventing agreements between themselves and CEOs because, when they act as shareholders and lenders, they perform more monitoring activities (De Andrés, Azofra, & Tejerina, 2010) in order to mitigate the opportunistic behavior of the new controlling shareholders (Mahrt-Smith, 2006). As the presence of pressure-sensitive institutional directors on boards grows, their monitoring role in contesting the power of other large shareholders also grows (Gomes & Novaes, 2005) and may be used to monitor CEO decisions and prevent the CEO from colluding with other pressure-sensitive institutional directors. Consequently, these directors may be more likely to decrease CEO compensation. The combination of the collusion and contest hypotheses may vary accordingly to support a nonlinear relationship between pressure-sensitive institutional directors and CEO compensation. This quadratic relationship is supported by De Andrés et al. (2010) and Morck, Nakamura and Shivdasani (2000), who examined the association between pressure-sensitive institutional ownership and corporate

performance. As addressed in the institutional directorship hypothesis, we can draw on Brewer's theory of optimal distinctiveness (1991) to give stronger support to the nonlinear correlation between pressure-sensitive women directors and CEO pay.

Pressure-resistant institutional directors are less likely to suffer from conflicts of interest arising from business relationships, and can serve as a monitoring mechanism in mitigating agency problems between shareholders and managers (Bhattacharya & Graham, 2007; Cornett et al., 2007). In this respect, they have a long-term horizon and, therefore, prefer to invest in firms with an international strategy (Tihanyi, Johnson, Hoskisson, & Hitt, 2003). Thus, pressure-resistant institutional directors on boards are more likely to actively be involved in monitoring, and may influence CEO pay by reducing total compensation (López-Iturriaga et al., 2015). David et al. (1998), Dong and Ozkan (2008), and Shin and Seo (2011) demonstrate a negative association between pressure-resistant institutional ownership and CEO compensation. Nevertheless, Chowdhury and Wang (2009) find a positive relationship between pressure-resistant institutional investors and CEO compensation. According to this evidence, pressure-resistant investors may be less efficient in the monitoring role and, therefore, CEOs may achieve more control in determining his/her compensation. Extending the arguments discussed in the first hypothesis to pressure-resistant female directors, their relation to CEO compensation will be negative to some extent, but when these directors reach a certain point, both interest conflicts and coordination problems may appear between them and be exploited by CEOs to obtain, for example, greater compensation. Given that we expect the same behavior for pressure-resistant female directors and institutional female directors as a whole, a deeper explanation for the nonlinear association, and particularly the quadratic relationship between pressure-resistant women directors and CEO pay can be found in the hypothesis focused on institutional women directors, based on Brewer's approach (1991).

To the best of our knowledge, there is no previous evidence that examines the effect that pressure-resistant and pressure-sensitive female directors on boards have on CEO compensation. Thus, based on the above arguments, we predict a nonlinear relationship, specifically quadratic, between pressure-resistant and pressure-sensitive institutional female directors on boards, and CEO pay. Thus, we posit the following hypotheses:

*H2: CEO pay is positively affected by pressure-sensitive women directors*

on boards, but when their presence on boards exceeds a certain threshold, CEO pay is negatively affected.

*H3:* CEO pay is negatively affected by pressure-resistant women directors on boards, but when their presence on boards exceeds a certain threshold, CEO pay is positively affected.

## Method

### Sample

The study is based on the total population of non-financial listed firms in Spain for the period from 2010 to 2014. Financial companies have been excluded both because they are under special scrutiny by financial authorities that constrain the role of their board of directors and because of their special accounting practices. The data were collected from the Public Register of the Spanish Securities Market Commission (CNMV), from the Sistemas de Análisis de Balances Ibéricos (SABI) database, and from corporate governance and directors' remuneration reports that companies have had to disclose annually since 2003 and 2011, respectively. The annual reports disclose the data for two consecutive years.

We have built an unbalanced panel of 553 firm-year observations. Nevertheless, the estimations based on unbalanced panels are as reliable as those based on balanced panels (Arellano, 2003).

### Variables

The dependent variable CEO compensation is defined as CEO\_COMP, and is calculated as the natural logarithm of CEO's total compensation, which includes salary, allowances, compensation for attending committees, and any other monetary benefits including stock options. Authors such as Croci et al. (2012) and Reddy et al. (2015), among others, have also employed the logarithm of CEO's total compensation.

We have also used several independent variables. The percentage of institutional female directors is defined as INST\_WOM. We define SENSIT\_WOM as the proportion of female directors who are representative of pressure-sensitive institutional investors and RESIST\_WOM as the proportion of female directors who are representative of pressure-resistant in-

stitutional investors.  $INST\_WOM^2$ ,  $SENSIT\_WOM^2$  and  $RESIST\_WOM^2$  are defined as the squares of the proportion of institutional female directors on boards, the proportion of pressure-sensitive female directors and pressure-sensitive institutional investors, and the proportion of pressure-resistant institutional female directors (Navissi & Naiker, 2006), respectively.

We control for a set of governance and financial variables that could have a significant impact on CEO compensation: when the chairperson of the board and CEO are the same person (CEO\_DUALITY), the length of time for which the CEO has performed this role (CEO\_TENURE), board independence (INDP), management ownership (OWNMAN), profitability (ROA), firm size (SIZE), the leverage of firms (LEV), and two dummy variables to control for whether there is a systematic difference between pressure-sensitive and pressure-resistant women directors (DUM\_FEM\_SENSIT and DUM\_FEM\_RESIST). Finally, we also consider year and firm fixed effects to control for year- and firm-specific effects on CEO compensation. A summary of all the variables is provided in Table 1.

**Table 1.**  
*Variable Descriptions*

Variables	Description
CEO_COMP	Natural logarithm of CEO total compensation
INST_WOM	Proportion of institutional female directors on board
SENSIT_WOM	Proportion of the board female directors who are representative of pressure-sensitive institutional investors
RESIST_WOM	Proportion of the board female directors who are representative of pressure-resistant institutional investors
CEO_DUALITY	Dummy variable equals to 1 if the same person serves simultaneously as CEO and President of the board; otherwise 0
CEO_TENURE	Number of years the CEO has held the firm's top ranking position
INDP	Ratio between the total number of independent directors on board and the total number of directors on board
OWNMAN	Proportion of stocks held by directors
ROA	Operate income before interests and taxes over total assets
SIZE	Natural logarithm of total assets
LEV	Ratio of book debt to total assets
DUM_FEM_SENSIT	The multiplication of a female dummy variable with a dummy variable representing pressure-sensitive female directors
DUM_FEM_RESIST	The multiplication of a female dummy variable with a dummy variable representing pressure-resistant female directors

## Results

### Descriptive Statistics

Table 2 presents the mean, the median, the standard error, and the 10th and 90th percentiles of the main variables. As can be seen in Table 2, CEO compensation, on average, is 4.252 (the natural logarithm of a CEO's total compensation expressed in Euros). Institutional female directors account for 7.85%, pressure-sensitive institutional female directors represent 2.59%, and pressure-resistant institutional female directors 5.26%. The proportion of independent directors on the boards, on average, is 33.38%, manager ownership represents 27.73%, CEO duality accounts for 32%, and CEO tenure, on average, is 1.71 years. The return on assets is -1.45%, the leverage, on average, is 57.33% and the mean size of the firm is 13.053 (log of the total assets).

**Table 2.**  
*Main Descriptive Statistics (N=553)*

Panel A. Continuous variables					
Variables	Mean	Median	Std. Dev.	Perc. 10	Perc. 90
CEO_COMP	4.252	5.537	3.184	0.000	7.711
INST_WOM	7.854%	0.000%	8.398%	0.000%	16.667%
SENSIT_WOM	2.590%	0.000%	3.326%	0.000%	7.130%
RESIST_WOM	5.264%	0.000%	8.009%	0.000%	14.286%
CEO_TENURE	1.714	1.000	1.514	0.000	4.000
INDP	33.379%	33.334%	18.511%	11.111%	60.000%
OWNMAN	27.726%	21.193%	27.578%	0.032%	66.900%
ROA	-1.445%	1.584%	55.683%	-16.207%	14.533%
SIZE	13.053	13.059	2.095	10.608	15.685
LEV	57.334%	54.149%	46.810%	9.404%	91.554%
Panel B. Dummy variables					
			% (0)	% (1)	
CEO_DUALITY			68%	32%	
DUM_FEM_SENSIT			95.48%	4.52%	
DUM_FEM_RESIST			69.44%	30.56%	

*Note.* Mean, median, standard deviation, and percentiles of the main variables. Panel A and B show the continuous and dummy variables, respectively.

To test for multicollinearity, we have calculated the Pearson correlation matrix. However, for the sake of brevity, the findings are not reported. The correlation between most pairs is low, generally below 0.3. Thus, we conclude that multicollinearity is not a problem.

### Multivariate Analysis

Table 3 offers the results of the linear regression for institutional, pressure-sensitive and pressure-resistant female directors on boards. Three models were built.

Table 3.

*Results of the Regression for Institutional, Pressure-Sensitive and Pressure-Resistant Female Directors on the Board of Directors*

	Expected sign	Model 1 Estimated coefficient ( <i>p</i> -value)	Model 2 Estimated coefficient ( <i>p</i> -value)	Model 3 Estimated coefficient ( <i>p</i> -value)
INST_WOM_BD	-	-2.957** (0.030)		
INST_WOM_BD <sup>2</sup>	+	19.786*** (0.000)		
SENSIT_WOM_BD	+		-3.710 (0.798)	
SENSIT_WOM_BD <sup>2</sup>	-		5.355 (0.829)	
RESIST_WOM_BD	-			-10.803* (0.096)
RESIST_WOM_BD <sup>2</sup>	+			43.726** (0.022)
CEO_DUALITY	+	1.359*** (0.000)	1.235*** (0.006)	1.104** (0.021)
CEO_TENURE	+	1.039*** (0.000)	1.186*** (0.005)	1.192*** (0.005)
INDP	-	-0.197 (0.593)	0.217 (0.606)	0.039 (0.921)
OWNMAN	+	0.009*** (0.000)	0.005* (0.080)	0.008** (0.017)
ROA	+	0.027 (0.801)	0.022 (0.855)	0.016 (0.892)
SIZE	+	0.625*** (0.000)	0.563*** (0.000)	0.595*** (0.000)
LEV	+	0.514*** (0.001)	0.599** (0.016)	0.577** (0.014)

DUM_FEM_SENSIT	+/-	1.745 (0.139)	
DUM_FEM_RESIST	+/-		0.323 (0.500)
Observations	553	553	553
R <sup>2</sup>	64.82%	65.24%	65.68%

*Note.* Estimated coefficients (p-value). CEO\_PAY is the natural logarithm of CEO total compensation; INST\_WOM\_BD is the proportion of institutional female directors on boards; SENSIT\_WOM\_BD is the proportion of the boards' female directors who are representative of pressure-sensitive institutional investors; RESIST\_WOM\_BD is the proportion of the boards' female directors who are representative of pressure-resistant institutional investors; CEO\_DUALITY equals to 1 if the same person serves simultaneously as CEO and President of the board and 0, otherwise; CEO\_TENURE is the number of years the CEO has held the firm's top ranking position; INDP\_BD is the proportion of independent directors on boards; OWNMAN is the proportion of stocks held by directors; ROA is the operate income before interests and taxes over total assets; FIRM\_SIZE is the natural logarithm of total assets and LEV is the ratio of book debt to total assets.

\* $p < .1$ , \*\* $p < .05$ , \*\*\* $p < .01$ .

In Model 1, the variable denoting institutional female directors on boards in linear (INST\_WOM) and nonlinear ways (INST\_WOM<sup>2</sup>), specifically quadratic, presents the expected signs and is statistically significant. Therefore, we cannot reject Hypothesis 1, as the proportion of institutional female directors negatively impacts CEO compensation, but when the percentage of institutional female directors reaches a certain level, it is positively affected. This quadratic relation is supported by two opposite premises: institutional female directors may monitor decisions and activities in order to reduce CEO compensation (e.g., Firth, Fung, & Rui, 2007; Ning, Hu., & Garza-Gómez, 2015; Sánchez-Marín, Baixauli-Soler, & Lucas-Pérez, 2011), but when their presence on boards reaches a certain threshold, they may collude with CEOs, increasing CEO compensation (Crocì et al., 2012; Fernandes, Ferreira, Matos, & Murphy, 2012). Thus, consistent with our results, previous research also supports a nonlinear relation between institutional directors and firm performance; this evidence suggests that, at low levels, the contest hypothesis prevails, as institutional female directors reduce CEO compensation. However, at high levels, the collusion hypothesis prevails, as they may work with CEOs to achieve their own aims and, therefore, will be more proactive in increasing CEO compensation. Contrary to our predictions, and as shown in Model 2, the variable pressure-sensitive institutional female directors on boards presents a linear (SENSIT\_WOM) and nonlinear (SENSIT\_WOM<sup>2</sup>) relation, exhibiting non-expected signs.

These are not statistically significant and, consequently, we cannot accept Hypothesis 2. This finding suggests that, contrary to our predictions, CEO compensation does not grow according to increases in pressure-sensitive institutional female directors on boards, beyond the point at which, further increases in these directors are not associated with decreases in CEO compensation.

In Model 3, we observe that the variables representing pressure-resistant institutional female directors on boards in linear (RESIST\_WOM) and non-linear (RESIST\_WOM<sup>2</sup>) ways, provide the expected signs and are statistically significant. Thus, the third hypothesis cannot be rejected. This result supports the notion that the proportion of pressure-resistant institutional female directors negatively affects CEO compensation, but when the proportion of these directors reaches a certain level, they have a positive effect on CEO compensation. Under this assumption, we extend the literature regarding pressure-resistant female directors and CEO compensation. Specifically, a moderate level of pressure-resistant female directors on corporate boards reduces CEO compensation, whereas an excessive presence of these same directors on boards increases CEO pay. This result is also supported by Jara-Bertín et al. (2012), Jiao and Ye (2013), and Navissi and Naiker (2006), who demonstrate a nonlinear relationship between pressure-resistant institutional directors and firm performance.

Regarding the control variables, we can observe that duality in the position of CEO and chairperson of the board (CEO\_DUALITY), tenure of CEO (CEO\_TENURE), ownership of managers (OWNMAN), firm size (SIZE), and leverage (LEV) present a positive relationship, as predicted, and they are statistically significant. The rest of the control variables are non-significant.

We have also considered endogeneity concerns between institutional female directors and CEO compensation. This matter is addressed by lagging the independent variables. The findings, unreported for the sake of brevity, are consistent with our main findings.

### **Extension of the Analysis**

The difficult situation in Spain has led listed firms to report losses and, consequently, it is likely that companies with losses do not increase CEO compensation. In the extended analysis, we remove companies that report



a negative return on assets (ROA) in the period of analysis from the sample. A positive ROA is an indicator of better firm performance, which may result in an increase of CEO remuneration as a higher firm performance can be the outcome of the CEO's management, effort, and talent (Gabaix & Landier, 2008). These arguments are consistent with theories focused on the interaction between company scale and the demand for CEO talent, and receive the most robust empirical support from the associated increases in firm performance and CEO compensation. Faria, Martins and Brandão (2014) find that as firm performance (measured as ROA) is enhanced, CEO compensation is also higher.

The findings, omitted for the sake of brevity, show that institutional female directors on boards influence CEO compensation when their presence reaches a higher level, but not when their proportion on the board is low. Furthermore, the findings also reveal that CEO compensation decreases at low levels of pressure-resistant institutional female directors, but when their presence reaches a certain threshold, further increases in these directors are associated with increases in CEO compensation. On the other hand, the results also demonstrate that the proportion of pressure-sensitive institutional female directors does not impact CEO pay at any level: low or high. The same analysis has been conducted removing companies that report a positive ROA in the period examined. According to the findings, institutional female directors, pressure-resistant, and pressure-sensitive institutional female directors behave in the same way as when the companies report profits. Hence, these results suggest that the financial crisis does not significantly impact on the relationship between institutional, pressure-sensitive, and pressure-resistant female directors on Spanish boards and CEO compensation.

## **Discussion and Conclusions**

Little attention has been paid to the role of institutional female directors on boards and its effect on CEO compensation. Thus, the aim of this study was twofold. First, we examined the impact of institutional female directors as a whole on CEO compensation. Second, we analyzed this relationship, differentiating between pressure-sensitive and pressure-resistant institutional female directors.

Our study provides evidence that institutional female directors play an im-

portant role as a mechanism of corporate governance. In particular, our paper demonstrates that institutional female directors considered a whole, and pressure-resistant female directors (representing institutional investors who do not maintain commercial ties with the firm where they are board members) negatively affect CEO compensation, but when they reach a certain level, CEO compensation increases. This finding suggests that as the presence of institutional and pressure-resistant women directors on boards increases, CEO pay decreases, in line with the monitoring hypothesis. Thus, board structures with a low presence of institutional and pressure-resistant female directors become an effective mechanism for monitoring CEO pay and controlling management team decisions that may benefit it; therefore, they will not align with management decisions regarding pay. However, when the presence of institutional and pressure-resistant women directors reaches a critical point, adding more institutional and pressure-resistant female directors to boards will enhance CEO pay, consistent with the entrenchment hypothesis. Therefore, a higher proportion of institutional and pressure-resistant female directors may imply entrenchment and, thereby support for managerial decisions, particularly those relative to compensation. Consequently, board structures with higher proportions of women directors become an ineffective mechanism for controlling CEO compensation and, thus, serve as a device to encourage pay. Our results also demonstrate that CEO compensation is not affected by the proportion of pressure-sensitive female directors on boards. Thus, the presence of these directors cannot be considered a significant monitoring mechanism in influencing CEO compensation as their support neither increases nor decreases it. This result is in contrast to the view that pressure-sensitive female directors would be willing to preserve the commercial relations that their representation maintains with the firm where they hold a directorship; as a result, neither the collusion nor the monitoring hypothesis prevails for pressure-sensitive female directors when they have to make a decision about CEO pay. The lack of relevant impact of pressure-sensitive institutional female directors on CEO pay may be explained by various reasons. First, pressure-sensitive women directors are representing mainly institutional investors, such as banks and insurance companies, whose aims differ from those of other institutional investors. As a consequence, their incentives, motivations, and ability to oversee CEO compensation may not be consistent with those of other institutional investors (Shin & Seo, 2011). Second, pressure-sensitive institutional female directors might

be more involved in issues relative to designing corporate strategies and finding solutions to problems rather than aligning with the management team or monitoring management team. Third, the specific composition of pressure-sensitive institutional female directors (e.g., representing banks and insurance companies) may lead to more transient investors. These directors might be influenced by the governing bodies in the firm's strategic decisions. Finally, pressure-sensitive institutional women directors may be more interested in not using CEO pay as a corporate governance mechanism for controlling or aligning with managers, but using other governance tools, which suggests that corporate governance mechanism are replaceable.

Our results have different implications for the corporate governance debate. First, the results obtained should be useful as an empirical guide for Spanish policymakers, regulators, and corporate decision-makers concerning female directors. The incorporation of women on boards promotes gender equality and increases the effectiveness of the board by creating diversity in the decision-making process. Second, in the current weak corporate-governance environment in Spain, the most important policy implication is that female directors affect remuneration policies. Therefore, our results should encourage policymakers to promote a more efficient corporate system through the incorporation of female directors. A third implication that can be derived from this analysis is that institutional female directors cannot be considered a homogeneous group; when they are considered as a whole, they behave in one way regarding CEO pay, but when we distinguish between pressure-sensitive and pressure-resistant female directors, they do not behave in the same way. Thus, companies should revisit the presence of institutional female directors on boards. Our findings are relevant for European countries characterized by weak corporate governance, where the most predominant agency conflict is the expropriation of minority shareholder's wealth by large shareholders. Finally, our results also have practical implications for managers, shareholders, and other stakeholders as they show that a low or high proportion of institutional, pressure-resistant and pressure-sensitive women directors on boards will determine which board structure is a more or less effective mechanism for monitoring CEO pay. Board structures made up of low proportions of institutional and pressure-resistant female directors act as an effective corporate governance mechanism for controlling CEO pay because they will reduce it, while high percentages of the same female directors result in an

ineffective means of monitoring CEO compensation as they will enhance it. On the other hand, board structures with pressure-sensitive female directors do not have an effect on CEO pay and, therefore, one implication of this finding is that their presence on boards may be neither effective nor ineffective as a corporate governance mechanism with regard to CEO compensation. Past research also recognizes that women's presence on corporate boards has a direct effect on CEO compensation and, consequently, on the corporate governance field. In this sense, female leadership style characteristics such as sympathy, conservatism, strictness, sensitivity, and so on, may help firms in the decision-making process regarding, for instance, CEO remuneration, which may result in better corporate governance.

The limitations of this study are the following. First, the proportion of institutional female directors on boards is limited in Spanish companies despite recommendations and LOIMH (2007). Second, this study is based on Spanish listed firms from 2010 to 2014. Our sample excludes industrial companies before 2010 because Spanish listed firms were not obligated to publish directors' remunerations until 2011 (disclosing also the data of 2010). Third, it is possible that there are unknown factors that could affect our dependent variable. While we have controlled for as many factors as possible based on theory and previous research, empirical and theoretical limitations prevent us from knowing whether all of the important influences have been controlled for and addressed.

We suggest the following future research avenues. Researchers may study the repercussions of institutional female directors on CEO compensation comparing boards and remuneration committees.

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