



BUSINESS  
RESEARCH  
QUARTERLY

[www.elsevier.es/brq](http://www.elsevier.es/brq)



## Institutional shareholding as a corporate governance mechanism that drives ceo pay

María Consuelo Pucheta-Martínez<sup>a,\*</sup>, Carlos Chiva-Ortells<sup>b</sup>

<sup>a</sup> University Jaume I Departamento de Finanzas y Contabilidad Campus del Riu Sec, S/n 12071-Castellón-Spain

<sup>b</sup> University Jaume I Departamento de Finanzas y Contabilidad Campus del Riu Sec, S/n 12071-Castellón-Spain

Received 7 April 2018; accepted 4 March 2019

### JEL CLASSIFICATION

CEO payG3;  
G34;  
M12

### KEYWORDS

Institutional  
directors;  
Pressure-resistant;  
Pressure-sensitive

**Abstract** We explore the effect of institutional directors on CEO pay (total, fixed and variable compensation). We delve particularly into the impact of pressure-sensitive and pressure-resistant institutional directors, who respectively represent institutional investors who maintain and investors who do not maintain a business relationship with the firm whose board they serve on. Focusing on CEO total pay, the findings show that institutional and pressure-resistant directors on boards behave similarly, affecting CEO total pay in a nonlinear way: as the presence of institutional and pressure-resistant directors on boards increases, the monitoring hypothesis prevails, and subsequently, better corporate governance decreases CEO total pay. However, when their presence on boards exceeds a critical point, the entrenchment hypothesis holds, thereby leading to an increase in CEO total pay. Contrary to our predictions, pressure-sensitive directors do not affect CEO total pay. Regarding the CEO's compensation structure (fixed and variable), the results suggest that institutional and pressure-resistant directors increase fixed compensation and reduce variable pay, while pressure-sensitive directors affect neither fixed nor variable compensation. This evidence supports the view that institutional directors should be considered as a heterogeneous collective.

© 2019 ACEDE. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## Introduction

Compensation policy is one of the internal control mechanisms that may improve corporate governance in firms, as it aligns interests between managers and shareholders. This may consequently mitigate agency costs between them,

reduce the managers' discretion and link the managers' targets with corporate value (Merino et al., 2009). However, the disproportionate pay earned by Chief Executive Officers (CEOs) and executives, particularly when these high amounts of pay are not sufficiently associated with firm performance, is a factor driving the recent attention to CEO pay.

Establishing and overseeing the company's policies for compensating management is a function of the board (Baixauli-Soler and Sánchez-Marín, 2011). For this reason, the effective board monitoring should result in the directors

\* Corresponding author.

E-mail address: [pucheta@uji.es](mailto:pucheta@uji.es) (M.C. Pucheta-Martínez).

<https://doi.org/10.1016/j.brq.2019.03.001>

2340-9436/© 2019 ACEDE. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Please cite this article in press as: Pucheta-Martínez, M.C., Chiva-Ortells, C., Institutional shareholding as a corporate governance mechanism that drives ceo pay. BRQ Bus. Res. Q. 2019, <https://doi.org/10.1016/j.brq.2019.03.001>

using the pay process as a means of aligning management and shareholder interests (Álvarez and Neira, 2006; Ozkan, 2007). However, sometimes the executives control the board of directors and, consequently, the board fails to fulfill its role.

As board features can be an element impacting the top managers' compensation (Hermalin and Weisbach, 2003), the board's composition is essential to achieving good performance. Extant research has analyzed the relationship between the board's characteristics and the CEO's compensation, focusing mainly on board composition and specifically on independent directors (Anderson and Bizjak, 2003; Ayadi and Boujèlbène, 2013; Petra and Dorata, 2008). Nevertheless, the previous literature has paid little attention to other board members, such as directors appointed by institutional investors (from now on institutional directors), since most previous literature has focused principally on the association between institutional shareholding as represented by shareholders, and executive compensation (e.g., Cheng and Firth, 2005; Ezzeddine and Lamia, 2006; Hartzell and Starks, 2003).

Institutional directors appointed by specific dominant or controlling shareholders (i.e., banks and insurance companies) perform a significant role on boards and in resolving issues in corporate governance (Crespí et al., 2004). In continental Europe, for instance, one of the most important agency problems is the expropriation of the minority investors' wealth by large investors; therefore, institutional shareholders are among the most relevant dominating shareholders whose presence on the board can compensate for the weaknesses of investor protection laws (De Andrés et al., 2005; Faccio and Lang, 2002). Institutional investors thus affect corporate governance and are expected to influence the companies in which they invest in an attempt to guarantee the companies' sustainability in the longer term (Ferrerira and Matos, 2008). Prior research finds, in fact, that institutional directors have a relevant effect on financial reporting quality (Pucheta-Martínez and García-Meca, 2014), earnings management (Koh, 2003), firm value (Kumar and Singh, 2012) and leverage (Byrd and Mizruchi, 2005 and Booth and Deli, 1999). However, in many countries, this particular agency problem has led to dominant block holders, particularly institutional investors, becoming directors. Accordingly, institutional directors have a significant influence on continental European boards, accounting for 40% of the directorships in countries such as Spain (Heidrick and Struggles, 2011). This high figure makes this country an interesting environment to explore the association between institutional directors and CEO pay.

With this purpose, we analyze first the effect of institutional directors on CEO remuneration (total, fixed and variable), as these directors represent institutional investors who are large shareholders: consequently, these directors might perform a relevant task in the supervision of managers and in the decision-making process. Second, we assume that institutional investors do not behave in a uniform way. Recent literature argues that their abilities and motivations to engage in corporate governance and their aims in doing so may be different (Almazán et al., 2005; Cornett et al., 2007; Ferreira and Matos, 2008). Brickley et al. (1988) posit that the type of commercial links between companies and institutional investors defines the role of institutional

investors and, consequently, also define the impact of institutional directors on CEO pay. Hence, business ties might raise conflicts of interest, as institutional investors without such relationships are probably able to perform more independently and to engage actively in monitoring, therefore challenging and imposing controls on corporate managers. Therefore, we distinguish between pressure-sensitive directors, who represent institutional investors that invest and maintain business ties with the firm where they are represented on boards, and pressure-resistant directors, who represent institutional investors that only maintain an investment relation with the company.

The remainder of the paper is structured as follows. Next, we address the theoretical background and hypotheses. The third section describes the institutional setting, the sample, the variables and the methodology. Section four presents the results. Finally, the conclusions, the study limitations and future research are provided.

## Theoretical Background And Hypotheses

Agency theory is one of the main frameworks used to describe the design of compensation policies. According to this theory, the separation between the ownership (principal) and the management (agent) causes information asymmetries and conflicts of interest between them (Jensen and Meckling, 1976). The mechanisms for monitoring the alignment to resolve this conflict of interest between owners and managers are established by agency theory. Among these mechanisms, compensation policy is used to align the CEO's behavior with the owners' interests (Fama and Jensen, 1983). The managerial power approach posits that CEOs have sufficient power to control the board and set or influence their own remuneration (Bebchuk and Fried, 2003). Hence, the greater the CEOs' power is, the greater their capacity to increase their income.

The academic literature shows that the monitoring role is played by institutional directors and not by independent directors (e.g., García-Osma and Gill de Albornoz, 2007; Pucheta-Martínez and García-Meca, 2014). In this respect, previous evidence reports that independent directors do not enhance corporate governance and do not affect CEO compensation (e.g., Core et al., 1999; De Andrés et al., 2017; Feng et al., 2010; O'Reilly and Main, 2010). It is therefore interesting to explore the role of institutional directorships in determining CEO pay.

Institutional investors can influence CEO compensation directly through monitoring activities (Gillan and Starks, 2000). According to Ryan and Schneider (2002), institutional investors are characterized by playing a relevant supervising role. In this regard, David and Kochhar (1996) argue that the larger proportion of shares usually held by institutional directors (Ozkan, 2011) makes it difficult and costly for them to sell off their shares, as such a move may negatively affect the stock price; therefore, they have incentives to perform monitoring activities and to affect CEO compensation. Furthermore, institutional investors manage money from other people; hence, they have to safeguard their investment against loss of value through monitoring activities and by promoting changes such as those affecting CEO compensation (David and Kochhar, 1996). Apart from

these incentives, monitoring provides benefits, such as influence on management, potential financial profit from such influence and better information (Chen et al., 2007), but monitoring is highly costly. Therefore, monitoring activities are probably only cost-effective for institutional investors and, as a result, these activities are most likely to be undertaken by institutional investors (Shleifer and Vishny, 1986).

Additionally, institutional investors believe that CEOs are overpaid (Bebchuk and Grinstein, 2005) and that this overpayment may affect firm value (Gerhart and Milkovich, 1990). Thus, institutional investors have reasons to sit on the board and actively cooperate in resolving corporate governance problems. Furthermore, institutional shareholders are more effective in influencing the board than dispersed individual ownership is (Cubbin and Leech, 1983). Accordingly, institutional investor involvement reduces the CEOs' influence on boards that set compensation, and their presence on boards is linked with tighter control over CEO compensation (Bertrand and Mullainathan, 2001), as institutional investors have the expertise and resources to perform this control function (Lee and Chen, 2011).

Prior literature examines the supervising role performed by institutional investors, specifically focusing on how they will affect CEO compensation consistent with investor interests. Specifically, while greater pay is preferred by the CEO, institutional directors seek lower CEO pay to increase the participation of shareholders in the firm's rents (Werner et al., 2005). In this vein, Hartzell and Starks (2003) evidence a negative association between institutional ownership concentration and management pay. These same results are obtained by Khan et al. (2005) and Ozkan (2011), who find a negative impact of large institutional investors on CEO compensation, showing the effectiveness of these owners in alleviating likely agency costs by reducing CEO compensation. The thesis that institutional investors decrease CEO pay is also suggested by Almazán et al. (2005), Core et al. (1999), Ezzeddine and Lamia (2006), Firth et al. (2007) and Ning et al. (2015). Sánchez-Marín et al. (2011) also report that the monitoring role performed by institutional investors reduces the compensation level of top management. Similarly, Cheng and Firth (2005) report that institutional ownership restrains executive pay, and Gómez-Mejía et al. (2003) find that institutional investors reduce the long-term income for CEOs. This evidence supports the monitoring (supervision) hypothesis, which suggests that some directors (institutional directors) have motivations to supervise management teams, and that, consequently, when performing their monitoring role, these directors (institutional directors) will have a negative impact on CEO pay.

However, authors such as Croci et al. (2012), Feng et al. (2010), Fernandes et al. (2012), Khan et al. (2005), Lee and Chen (2011) and Victoravich et al. (2013) find that institutional ownership positively impacts CEO pay. This may be because to maintain their controlling position, institutional owners have sufficient power to make decisions according to their own interests and against those of minority owners (Cornett et al., 2007; Ruiz-Mallorquí and Santana-Martín, 2009). Therefore, institutional shareholders tend to negotiate privately with firms (Carleton et al., 1998) to ensure that their own aims are met, and, thus, they may collude with the management team (Pound, 1988). Accordingly, institutional directors most likely take part in tunneling activities (e.g.,

offering loan guarantees, obtaining advantageous prices in contracts or expropriating corporate opportunities), rather than in performing monitoring activities, namely, the monitoring of expropriation of wealth from minority investors (Johnson et al., 2000).

Other possible reasons for this positive relationship between institutional directors and CEO pay may be because institutional directors do not actually play a monitoring role and therefore do not reduce agency problems. Rather, as other theoretical perspectives suggest (resource dependence theory and the stewardship theory), they provide other benefits, such as legitimacy, expertise, and access to resources, advice and channels of information. CEOs may thus use their power and influence to obtain better compensation. Broadly speaking, these views are consistent with the entrenchment (collusion) hypothesis, which posits that some directors (institutional directors) might have motivations to align with managers and, as a result, institutional directors will most likely support higher pay for a CEO.

While prior literature demonstrates a linear association between institutional directors and CEO pay, a nonlinear relationship between institutional directors and CEO pay has not yet been explored. Nevertheless, a nonlinear relationship (may be a U-shaped or an inverted U-shaped one) has been evidenced by authors who have analyzed the relationship between the largest shareholders, such as institutional investors, and corporate performance (Claessens et al., 2002; Thomsen and Pedersen, 2000; Yeh, 2005). Specifically, Chirinko et al. (1999); Jara-Bertin et al. (2012), Navissi and Naiker (2006) and Zou (2010) show an inverted U-shape association between institutional shareholding and corporate performance. Therefore, the supervising hypothesis may be supported given that a higher percentage of institutional directors on boards results in a higher corporate performance. However, when their presence on boards reaches a tipping point, more institutional directors beyond this point will be negatively associated with firm value because they might entrench themselves. In this situation, they gain absolute control of firms and extract private benefits, confirming the entrenchment hypothesis. This nonlinear relationship between institutional shareholding and corporate performance can be extended to the association between institutional directors and CEO compensation.

These arguments and findings are in line with Brewer (1991), who proposes the theory of optimal distinctiveness. This theory posits that the outcomes of a group's composition are expected to be nonlinear: very low and very high proportions of certain characteristics (institutional directors) within a group (board of directors) result in more negative effects (it will result in a higher CEO compensation when, according to prior research, a lower CEO compensation was expected). By contrast, more positive effects (it will result in a lower CEO compensation when, according to prior research, a lower CEO compensation was expected) can occur when a balanced proportion of characteristics exists (thus U-shaped). This would suggest that institutional directors not only might affect CEO compensation linearly but also that a nonlinear relationship could be possible. Additionally, a higher concentration of power among other kinds of directors might be progressively more perceptible, as more institutional directors are appointed by institutional investors and may possibly generate dissatisfaction with

those not holding this power, that is, the increasing number of institutional directors not holding power in the company. Therefore, this discontent, which could be due to their loss of power and control, might result in individual firm effects, such as lowered productivity or turnover, whose combined result would be adverse to firm performance. The power sharing among a few directors limits the power of the other directors, potentially resulting in negative effects on company outcomes and impacting CEO compensation. There are two opposite effects on CEO compensation that can therefore be exerted by institutional directors: these effects are supported by a nonlinear relationship (U-shaped), not by a linear one.

Consequently, the representation of institutional directors on boards will allow them to perform a more active supervising role, preventing CEOs from controlling the board and behaving opportunistically with their remuneration. However, due to the differences (e.g., legal restraints, investment aims and accountabilities) among institutional directors (Verstegen and Scheider, 2002), conflicts may increase when their representation rises on boards. This could happen because, instead of performing their monitoring tasks in an efficient way, they will be more interested in competing for control and in the formation of competing coalitions. Thus, institutional directors will prioritize forming alliances to challenge the power of other institutional directors (Jara-Bertín et al., 2008). Strategic choices, such as CEO compensation, can be affected consequently by such differences (Hoskisson et al., 2002). In this regard, beyond a certain threshold, more institutional directors on boards may generate coordination problems, and thus efficient monitoring performed by these directors may be lost; this may be exploited by the CEO to collude with institutional directors. In this way, institutional directors could pursue their own goals (e.g., offering loan guarantees, obtaining advantageous prices in contracts or expropriating corporate opportunities) and CEOs could increase their managerial discretion to increase compensation. These arguments support a nonlinear association between institutional directors and CEO pay, which can be stated under the following hypothesis:

H1a: There is a nonlinear association between institutional directorship and CEO total compensation. Institutional directors negatively affect CEO total compensation, but when their presence on the board reaches a tipping point, they positively impact CEO total compensation.

On the other hand, institutional directors may also affect the structure of CEO compensation (Shin and Seo, 2011). If institutional directors perform monitoring activities effectively, they will prefer more CEO fixed compensation and less CEO variable compensation. Despite the fact that the variable compensation is expected to positively impact firm value and align the managers' and shareholders' interests, variable compensation may boost the opposite behavior. Variable pay might promote higher entrenchment behavior by CEOs. (Crocí et al., 2012) and may encourage CEOs to pay more attention to the short-term stock price (Pegn and Röell, 2008) and to manipulate earnings (Bergstresser and Philippon, 2006). In this regard, the direct monitoring role played by institutional directors may result in a lower demand for variable compensation. Based on the above arguments, we put forward the following hypothesis:

H1b: Institutional directors positively influence the CEO's fixed compensation, and negatively influence the CEO's variable compensation.

Nevertheless, institutional directors (banks, pension funds, mutual funds or insurance companies, among others) are a heterogeneous group and employ different investment strategies and incentives to participate in corporate governance (Bennett et al., 2003). The efficiency of supervision by institutional directors is affected by commercial ties, limiting both their ability to monitor and their influence. In this vein, institutional directors can be classified into two groups: pressure-sensitive institutional directors and pressure-resistant institutional directors (e.g., Almazán et al., 2005; Brickley et al., 1988; Chen et al., 2007; Cornett et al., 2007; López-Iturriaga et al., 2014; Pucheta-Martínez and García-Meca, 2014; Ruiz-Mallorquí and Santana-Martín, 2009).

Pressure-resistant institutional directors (investment funds, mutual funds and pension funds) represent institutional investors that only have an investment relation with companies in which they have invested and these directors do not have to face a potential conflict of interest arising from their commercial links to a firm. This allows them to be more independent of the firm, and it is more probable that they will take an active part in monitoring and exerting pressure to instigate changes (Almazán et al., 2005; Ferreira and Matos, 2008; Jara-Bertín et al., 2012; Pucheta-Martínez and García-Meca, 2014; Ruiz-Mallorquí and Santana-Martín, 2009), thereby mitigating agency problems between shareholders and managers. These directors prefer to invest in a long-term horizon (Tihanyi et al., 2003), are more likely to actively play a supervising role, may affect firm operations according to the shareholders' interests, and are less exposed to pressure from the companies in which they have invested. From an agency theory perspective, pressure-resistant directors will have less conflicting interests that might prevent them from implementing monitoring actions by acting as active monitors of the firm's management (Brickley et al., 1988). This supports the view that pressure-resistant directors will support a decrease in CEO compensation.

Previous research provides evidence that pressure-resistant institutional directors reduce agency problems through lowering levels of executive compensation. Parthiban et al. (1998) show a negative relationship between pressure-resistant institutional ownership and CEO compensation. Similarly, Dong and Ozkan (2008) also demonstrate that director pay is constrained by pressure-resistant institutional investors. Almazán et al. (2005) and López-Iturriaga et al. (2015) stress that pressure-resistant institutional directors are negatively associated with CEO compensation, and Shin and Seo (2011) find that as pressure-resistant directors, directors representing a pension fund have a negative influence on CEO compensation. Shin (2011) highlights that to reduce agency problems, pressure-resistant institutional directors prefer to monitor CEO compensation rather than linking it to firm performance, as such pay schemes may encourage CEOs to engage in fraudulent behavior (Zhang et al., 2008). It is therefore probable that due to their monitoring role, pressure-resistant institutional directors will reduce CEO compensation.



On the other hand, [Jiao and Ye \(2013\)](#) extend the nonlinear relationship (an inverted U-shaped) shown by [Jara-Bertín et al. \(2012\)](#) and [Navissi and Naiker \(2006\)](#) between institutional directors and corporate performance to that between pressure-resistant institutional directors and firm performance. The authors show an inverted U-shaped association between pressure-resistant institutional investors and the firms' future performance. This research supports the monitoring role played by pressure-resistant directors regarding the management team, as their presence on boards enhances firm value. However, when the percentage of pressure-resistant directors exceeds a certain point, the supervision role performed by them becomes ineffective because their influence on managers decreases. This might be because pressure-resistant directors pursue their own interests, and it is more probable that they may collude with the management team to extract personal profits, thereby negatively impacting firm performance.

We extend the arguments that support a nonlinear association between pressure-resistant directors and firm value to the analysis between pressure-resistant directors and CEO compensation. Consistent with the impact of institutional directors as a whole, we posit that efficient monitoring by pressure-resistant directors will result to some extent in a negative relationship between them and CEO compensation. However, if their presence on boards reaches a threshold, both conflicts of interest and coordination problems may appear between pressure-resistant directors, and this may be exploited by CEOs to ensure their own aims are met by various means, for example, by obtaining greater compensation. In this context, efficient monitoring may be lost, and CEOs may achieve more control and power and collude with pressure-resistant directors ([Jiao and Ye, 2013](#)). Therefore, instead of a linear relationship, there might be a nonlinear (a U-shaped) influence of pressure-resistant directors on CEO compensation.

In contrast, pressure-sensitive institutional directors (banks and insurance companies) are appointed by pressure-sensitive investors, who apart from investing in firms, also have a commercial relation with them. It is possible that the main objective of pressure-sensitive institutional investors, unlike pressure-resistant investors, is not simply to maximize firm value but also to expand their own businesses and derive private profits ([Cuervo, 2002](#); [Gorton and Schmid, 2000](#)). Pressure-sensitive institutional directors are more likely to face conflicts of interest arising from the business relationship ([Almazán et al., 2005](#); [Shin and Seo, 2011](#)), as they may jeopardize the business relationship if they propose changes ([Chen et al., 2007](#)). Furthermore, pressure-sensitive directors may prefer to not monitor CEOs, and it is more likely they will support the CEO's actions ([Brickley et al., 1998](#)). These directors will incur higher monitoring costs than the pressure-resistant directors will incur because the effort required from pressure-sensitive investors to monitor managers is greater due to the need to protect their business relationship ([Almazán et al., 2005](#); [Chen et al., 2007](#)). This dependent position means that pressure-sensitive directors may lack the incentives, motivations and abilities to effectively monitor managers.

In this vein, past research finds that pressure-sensitive institutional directors negatively impact firm decisions, as these directors, who maintain a double relationship with

the firm, may have interests that conflict with the shareholders' interests (e.g., [Brickley et al., 1988](#); [Ruiz-Mallorquí and Santana-Martín, 2009, 2011](#); [Tribó and Casasola, 2010](#)). Another reason that could explain their lack of incentives to monitor managers is that they face fiduciary standards and prefer to invest in short-term horizons in order to obtain short-term earnings (see [Van der Stede, 2013](#)).

Pressure-sensitive institutional directors may be an effective mechanism for mitigating agency problems and protecting minority shareholders ([Canals, 1995](#)). Nonetheless, given the low level of shareholder protection in civil law countries, their ability to create, dominate and control corporate groups ([Morck and Nakamura, 1999](#)), their use of privileged information to enhance their business, and their ability to create alliances with managers or other stakeholders allows pressure-sensitive directors to make private gains or profits at the expense of minority shareholders ([Gorton and Schmid, 2000](#); [Roe, 2003](#)). Pressure-sensitive directors may face higher costs of extracting private benefits since most of them are under strict control by regulatory authorities ([Maury and Pajuste, 2005](#)). For this reason, they might collude with CEOs by supporting their decisions, such as an increase in the CEOs' compensation, in order to protect their business with the firm. [David et al. \(1998\)](#), [López-Iturriaga et al. \(2015\)](#) and [Shin and Seo \(2011\)](#) show that pressure-sensitive directors increase CEO compensation.

Alternatively, the addition of pressure-sensitive directors on boards beyond a tipping point may play a more effective role in firm governance, which may have a negative effect on CEO pay. Although pressure-sensitive institutional directors are able to create coalitions to derive private benefits ([Bennedsen and Wolfenzon, 2000](#); [Jara-Bertín et al., 2008](#)), as their presence on boards increases, they may be interested in preventing the formation of agreements between themselves and CEOs to avoid expropriation activities. The monitoring role played by them in contesting the power of other large shareholders may be enhanced ([Gomes and Novaes, 2005](#)) and could be used to monitor the CEOs' decisions (e.g., CEO compensation) and to prevent collusion between the CEOs and other pressure-sensitive directors. Pressure-sensitive directors might challenge the power of controlling owners and dominant shareholders, enhancing corporate governance, which may lead to a decrease in CEO pay.

The combination of these ideas supports a nonlinear relationship between pressure-sensitive institutional directors and CEO compensation. This nonlinear relationship is supported by [De Andrés et al. \(2010\)](#) and [Mork et al. \(2000\)](#), who analyzed the relationship between pressure-sensitive institutional ownership and firm value (U-shaped).

A nonlinear relationship between pressure-sensitive/pressure-resistant directors and CEO pay has not yet been explored, as far as we know. Based on the above arguments, we propose the following hypotheses:

H2a: There is a nonlinear relationship between pressure-sensitive institutional directors and CEO total compensation. Pressure-sensitive directors positively influence CEO total compensation, but when their presence on the board reaches a certain threshold, they negatively affect CEO total compensation.

H2b: There is a nonlinear relationship between pressure-resistant institutional directors and CEO total compensation.

Pressure-resistant directors negatively influence CEO total compensation, but when their presence on the board reaches a certain threshold, they positively affect CEO total compensation.

As mentioned above, institutional directors might impact the structure of CEO pay. Pressure-resistant directors are less likely to receive pressure from firms in which they have invested because they do not tend to maintain a business relation with firms. Their actions are characterized by a long-term orientation: they will actively perform monitoring activities and for the reasons suggested in prior hypotheses, will prefer more CEO fixed compensation and less CEO variable pay. Concerning pressure-sensitive institutional directors, they will prefer more variable than fixed compensation for CEOs, as these directors prefer to invest in the short-term horizon, and the variable component allows the CEOs to focus on the short-term stock price (Pegn and Röell, 2008). Croci et al. (2012) report that the CEOs' entrenchment may be enhanced by variable components, and pressure-sensitive directors will align with CEOs to gain more power in order to not damage their business with firms where they serve as board members. According to the above arguments, we posit the following hypothesis:

H2c: Pressure-sensitive institutional directors negatively (positively) influence CEO fixed (variable) compensation, while pressure-resistant institutional directors positively (negatively) influence CEO fixed (variable) compensation.

## Research Design

### Institutional setting

The features of the corporate governance system may influence compensation policy (Álvarez and Neira, 2006; O'Reilly and Main, 2010). The Spanish corporate governance environment is characterized by a low level of shareholder protection, the presence of controlling shareholders due to the high level of ownership concentration (De Andrés et al., 2005), the strong influence of pay practices between firms (firms tend to copy the remuneration practices of other firms) (Fernández-Alles et al., 2006) and a one-tier board system (all directors, nonexecutives and executives, make up one board). De Miguel et al. (2004) point out that, unlike the situation in the US and the UK, in Spain, corporate control by the market is very unusual. This explains why the main agency problem among listed firms is the expropriation of the minority shareholders' wealth by controlling shareholders. In addition, unlike the UK and the US, where financial markets play an important role, the capital markets are less liquid in Spain. Thus, Spain has a financial system in which the banks have played a significant and important role not only as creditors but also as shareholders and directors on the boards of firms.

To increase the transparency of firms and the level of protection of minority shareholders, Spain has undergone both legal and institutional changes. Several corporate governance codes have been issued. Focusing on compensation policy and given the importance of this issue, the Código Unificado de Buen Gobierno de las Sociedades Cotizadas (CUBG) (2006) made recommendations to improve transparency concerning the remuneration of both managers and

directors because transparency is essential to avoid excessive remuneration. In the same vein, in 2003, the Spanish Government enacted the Transparency Act (Law 26/2003) aimed at strengthening the transparency of Spanish listed companies. This law was the first to make it mandatory for listed companies to disclose details of the directors' compensation. Since 2011, and according to the Sustainable Economy Act (Law 2/2011), listed companies have been required to submit both the directors' and the senior executives' compensation policy to a nonbinding vote at the general meeting of shareholders. The ECC/461/2013 Act was issued, whereby listed firms have to individually disclose the remuneration of their directors and managers. Finally, whereas the 31/2014 Act aims at upgrading and improving governance, making the creation of an appointment and remuneration committee mandatory, the last updated corporate governance report (CBGSC) (2015) recommends separating this committee into two: an appointment committee and a remunerations committee.

Given the high ownership concentration of most European listed firms in continental countries, such as Spain, Italy and Germany, and in intermediate position countries, such as France, dominant shareholders take important positions on boards and strongly influence management. Among the dominant shareholders, institutional investors are some of the most important controlling shareholders in Europe (Crespí et al., 2004). Institutional investors, represented by institutional directors on boards, own most of the main European continental corporations (Spain, France and Italy). Therefore, how institutional directors take part in the firm's governance is a significant public policy matter.

Spain provides a good scenario in which to examine how institutional directors may affect CEO pay. First, boards become the main mechanism for mitigating the most important Spanish agency conflict (the expropriation of minority shareholders' wealth by controlling shareholders). Second, as highlighted above, Spain is the European country with the highest proportion of institutional investors on boards. Specifically, 40% of board directors in Spain are appointed by institutional investors.

### Sample

The sample for the panel data analysis was extracted from the population of Spanish nonfinancial, listed firms for the period 2010–2014. Financial companies have been removed from the sample because of their particular accounting practices, which make it more difficult to compare their financial statements to those of nonfinancial companies. Financial companies are under stricter supervision by financial authorities, so the role of their boards may be restricted by this control. An unbalanced panel consisting of 553 firm-year observations was drawn. Mergers, takeovers or other companies going public explain the unbalanced panel. However, Arellano (2003) argues that findings obtained for such panels are as trustworthy as those provided by balanced panels.

Different sources were consulted to build the database. Financial information was obtained from the "Sistemas de Análisis de Balances Ibéricos" (SABI) database. Corporate governance information and the CEO compensation figures were obtained from the public registers of the Spanish

Securities Market Commission (CNMV), particularly from the corporate governance and managers and directors' remuneration reports that companies have disclosed annually since 2003 and 2011, respectively. The annual reports disclose the data for two consecutive years.

## Variables

Three dependent variables are defined to test the hypotheses. CEO.PAY is the CEO total compensation, measured as the logarithm of the CEO's total compensation. Authors, such as [Baixauli-Soler and Sánchez-Marín \(2011\)](#), [Crocí et al. \(2012\)](#) and [Lin and Lin \(2014\)](#), among others, also use the logarithm of the CEO's compensation. FIX\_CEO\_PAY is the proportion of the CEO's fixed compensation, calculated as the ratio between the CEO's total fixed compensation and the CEO's total compensation, and VAR\_CEO\_PAY is the proportion of the CEO's variable compensation, measured as the ratio between the CEO's total variable compensation and the CEO's total compensation ([López-Iturriaga et al., 2015](#)).

Several independent variables are used to examine how the presence of institutional investors on boards is associated with CEO pay. The board's composition is provided in corporate governance reports that Spanish listed firms have to disclose every year. Regarding institutional directors on boards, the report provides the identification of both the institutional investor and its representative. If the institutional director represents a bank or insurance

company, this director is classified as a pressure-sensitive institutional director, but if the institutional director represents an investment fund, a mutual fund or a pension fund, this director is classified as a pressure-resistant institutional director.

The variable for institutional directors, who represent institutional investors on boards, is defined as INST and is calculated as the percentage of the institutional directors sitting on boards ([López-Iturriaga et al., 2015](#); [Pucheta-Martínez and García-Meca, 2014](#)). Institutional directors are also differentiated into pressure-sensitive and pressure-resistant directors. The variable SENSIT represents the proportion of pressure-sensitive directors on boards, and RESIST represents the proportion of pressure-resistant directors on boards ([García-Meca et al., 2013](#); [López-Iturriaga et al., 2015](#); [Pucheta-Martínez and García-Meca, 2014](#)). Finally, the square of the proportion of institutional, pressure-sensitive and pressure-resistant directors is used to analyze whether these directors affect CEO compensation in a nonlinear way. These variables are defined as INST<sup>2</sup>, SENSIT<sup>2</sup> and RESIST<sup>2</sup>, respectively.

CEO compensation may be affected by other factors. According to previous literature, the following variables are taken into account to control for these factors: firm size is defined as SIZE; return on assets is defined as ROA; duality in the position of the CEO and president of the board of directors is defined as CEO\_DUALITY; the length of time for which the CEO has performed this role is defined as CEO\_TENURE; CEO ownership is defined as CEO\_OWN; the number of

**Table 1** Variable description.

Variables	Expected Sign <sup>a</sup>	Description
CEO.PAY		The logarithm of the CEO's total compensation
FIX_CEO_PAY		The ratio between the CEO's total fixed compensation and the CEO's total compensation
VAR_CEO_PAY		The ratio between the CEO's total variable compensation and the CEO's total compensation
INST	-	The ratio between the number of institutional directors and the total number of directors on the board
INST <sup>2</sup>	+	The square of INST
SENSIT	+	The ratio between the number of institutional directors who represent pressure-sensitive institutional investors on the board and the total number of directors on boards
SENSIT <sup>2</sup>	-	The square of SENSIT
RESIST	-	The ratio between the number of institutional directors who represent pressure-resistant institutional investors on the board and the total number of directors
RESIST <sup>2</sup>	+	The square of RESIST
SIZE	+	The logarithm of total assets
ROA	+/-	The operating income before interest and taxes over total assets
CEO_DUALITY	+	A dummy variable equal to 1 if the CEO and president of the board are the same and 0 otherwise
CEO_TENURE	+	The years that the CEO has held the firm's highest position
CEO_OWN	+	The percentage of shares held by the CEO
BDMEET	+/-	The number of meetings held by the board in a year.
INDP	-	The ratio between the number of independent directors and the total number of directors on boards
OWNMAN	-	The proportion of shares held by directors

<sup>a</sup> Expected signs when the dependent variable refers to CEO total compensation (CEO.PAY).

meetings held by the board is defined as BDMEET; board independence is denoted as INDP; and, finally, management ownership is also considered and is defined as OWNMAN. We also take into account year effects (YEAR) by including a set of dummy variables. In Table 1, we provide the description of all variables used in this research.

To check our hypotheses, the following model is estimated:

$$\text{CEO\_COMPENSATION}_{it} = \beta_0 + \beta_1 \text{INST}_{it} + \beta_2 \text{INST}^2_{it} + \beta_3 \text{SENSIT}_{it} + \beta_4 \text{SENSIT}^2_{it} + \beta_5 \text{RESIST}_{it} + \beta_6 \text{RESIST}^2_{it} + \beta_7 \text{SIZE}_{it} + \beta_8 \text{ROA}_{it} + \beta_9 \text{CEO\_DUALITY}_{it} + \beta_{10} \text{CEO\_TENURE}_{it} + \beta_{11} \text{CEO\_OWN}_{it} + \beta_{12} \text{BDMEET}_{it} + \beta_{13} \text{INDP}_{it} + \beta_{14} \text{OWNMAN}_{it} + \sum \beta_j \text{YEAR}_t + \varphi_i + \mu_{it}$$

Where:

CEO\_COMPENSATION refers to CEO total compensation, CEO fixed compensation and CEO variable compensation. The firm and the time period are represented by the subscript ‘‘i’’ and ‘‘t’’, respectively.  $\varphi_i$  symbolizes the unobservable time-invariant heterogeneity, i.e., the unobservable heterogeneity (firm-specific effects), which is constant over time and variable among individuals (Greene, 1988), and  $\mu_{it}$  is the disturbance term that varies the cross-time and cross-section joint effect.

The dynamic panel data procedure of the generalized method of moments (GMM) (Arellano and Bond, 1991; Blundell and Bond, 1998) has been used to run our model. This estimator introduces the temporal dependency by lagging the dependent variable. The GMM estimator is more efficient and consistent than other procedures because this estimation corrects the unobservable heterogeneity ( $\varphi_i$ ) by addressing it as an individual effect and by eliminating it with the first differences of the variables. Moreover, the GMM estimator also considers endogeneity and mitigates the bias of the estimation.

The GMM estimator provides the Wald  $\chi^2$  test, the Arellano–Bond tests AR(1) and AR(2), and the Hansen test. The Wald  $\chi^2$  test shows us the model fitness. Whether a second-order serial correlation in the first difference residuals exists is shown by the Arellano–Bond test AR(2). There is no second-order serial correlation if the null hypothesis of ‘‘no serial correlation’’ is rejected ( $p > 0.1$ ). The Hansen test of overidentifying restrictions corroborates the appropriateness of the instruments employed in the estimation if the null hypothesis of noncorrelation between the instruments and the error term is also rejected ( $p > 0.1$ ).

Table 2 Main Descriptive Statistics.

Panel A. Continuous variables						
Variables	N	Mean	Std. Dev.	Perc. 10 <sup>th</sup>	Perc. 50 <sup>th</sup>	Perc. 90 <sup>th</sup>
CEO_PAY	553	4.252	3.184	0.000	5.537	7.712
FIX_CEO_PAY	553	84.883	35.711	51.613	100.000	100.000
VAR_CEO_PAY	553	15.117	35.710	0.000	0.000	22.393
INST	553	44.290	28.322	11.111	44.444	75.000
SENSIT	553	7.580	13.821	0.000	0.000	26.667
RESIST	553	36.710	26.617	0.000	33.333	71.429
BDMEET	553	9.707	3.979	5.000	10.000	14.000
CEO_TENURE	553	1.714	1.514	0.000	1.000	4.000
CEO_OWN	553	5.516	15.243	0.000	0.001	22.393
INDP	553	33.383	18.513	11.111	33.333	60.000
OWNMAN	553	27.726	27.578	0.032	21.193	66.900
ROA	553	-1.445	55.683	-16.208	1.584	14.533
SIZE	553	13.054	2.095	10.608	13.059	15.686

  

Panel B. Dummies variables				
Variable	0	% (0)	1	% (1)
CEO_DUALITY	376	67.993	177	32.007

The mean, standard deviation and percentiles of the main variables are shown. Panel A and B show the continuous and dummy variables, respectively. CEO\_PAY is the logarithm of the CEO’s total compensation; FIX\_CEO\_PAY is the ratio between the CEO’s total fixed compensation and the CEO’s total compensation; VAR\_CEO\_PAY is the ratio between the CEO’s total variable compensation and the CEO’s total compensation; INST is the proportion of institutional directors on the board; SENSIT is the proportion of the board directors who are representative of pressure-sensitive institutional investors; RESIST is the proportion of the board directors who are representative of pressure-resistant institutional investors; BDMEET is the number of meetings held by the board in a year; CEO\_TENURE is the number of years the CEO has held the firm’s highest position; CEO\_OWN is the percentage of shares held by the CEO; INDP is the proportion of independent directors on the board; OWNMAN is the proportion of stocks held by the directors; ROA is the operating income before interest and taxes over total assets; SIZE is the logarithm of total assets; and CEO\_DUALITY equals 1 if the CEO and president of the board are the same person and 0 otherwise.



## Results

### Descriptive statistics

The mean value, the standard deviation and the 10<sup>th</sup>, 50<sup>th</sup> and 90<sup>th</sup> percentiles are provided in Table 2.

As seen, on average, the CEO total compensation (CEO.PAY) is 4.25 (the logarithm of the CEO's total pay). Of the CEO's total compensation, the proportion of the CEO's fixed compensation comprises, on average, 84.88%, while the proportion of the CEO variable compensation comprises, on average, 15.12%. Regarding the composition of boards of directors, 44.29% of the directors represent institutional investors (INST); of these, 36.71% of institutional directors are representatives of institutional investors maintaining solely an investment relationship with the firms in which they invest (pressure-resistant directors: RESIST), and 7.58% of institutional directors represent institutional investors maintaining both a business and an investment relationship with the firms (pressure-sensitive directors: SENSIT). The proportion of independent directors on the boards (INDP) is 33.38%, on average.

With respect to other variables, on average, the profitability (ROA) and the firm size (SIZE) are -1.45% and 13.05 (logarithm of total assets), respectively. On average, the boards of directors held 9.71 meetings per year (BDMEET), a figure that exceeds the recommendation of the CBGSC (2015) (eight meetings/year). Finally, 32% of the sample firms have the same person as CEO and chairman of the board

of directors (CEO\_DUALITY), the average length of the CEO's tenure is 1.7 years (CEO\_TENURE), the percentage of shares held by CEOs (CEO.OWN) is 5.52%, and the directors hold 27.73% of the stocks (OWN.MAN).

### Multivariate analysis

Although not reported for the sake of brevity, the correlation matrix to check for multicollinearity shows that none of the correlation coefficients are sufficiently high (> 0.80) to cause multicollinearity problems (Archambeault and DeZoort, 2001), except the pairs INST-RESIST and FIX\_CEO\_PAY-VAR\_CEO\_PAY. These pairs are correlated by definition, as these are relationships between corporate governance variables and compensation variables and these pairs of variables are not incorporated in the model at the same time. According to these results, the models used have no multicollinearity issues.

In Table 3, by using three models, we provide the results of the regressions estimated to examine the effect on CEO compensation (total, fixed and variable compensation) of institutional directors sitting on boards. In model 1, where the impact of institutional directors on the CEO total compensation is analyzed, the linear INST variable is significant and negatively associated with CEO total compensation, while the nonlinear INST<sup>2</sup> term is positive and significantly associated with CEO total compensation. This evidence leads us not to reject the hypothesis H1a. The results indicate that the proportion of institutional directors

**Table 3** Results of the GMM regression for institutional directors sit on the board of directors.

Variables	Model 1 CEO.PAY	Model 2 FIX.CEO.PAY	Model 3 VAR.CEO.PAY
CEO.PAY(t-1)	0.870*** (0.000)	-	-
FIX.CEO.PAY(t-1)	-	0.155***(0.006)	-
VAR.CEO.PAY(t-1)	-	-	0.109** (0.025)
INST	-3.213** (0.024)	0.277* (0.068)	-0.180*(0.074)
INST <sup>2</sup>	0.707** (0.034)	-	-
SIZE	0.247*** (0.009)	0.055 (0.430)	0.027 (0.628)
ROA	0.099 (0.278)	-0.212 (0.408)	0.278 (0.205)
CEO_DUALITY	0.329 (0.496)	0.030 (0.818)	0.049 (0.594)
CEO_TENURE	0.016 (0.803)	-0.063*** (0.001)	0.058** (0.018)
CEO.OWN	-0.039 (0.163)	0.003 (0.626)	-0.001 (0.739)
BDMEET	-0.085 (0.140)	-0.025 (0.672)	0.004 (0.924)
INDP	-2.184 (0.195)	0.751 (0.354)	-0.914 (0.147)
OWNMAN	1.188 (0.217)	-0.119 (0.909)	-0.121 (0.865)
<b>Year effects</b>	Yes	Yes	Yes
<b>Wald test (Chi-square, p&gt; Chi<sup>2</sup> )</b>	9.170 <sup>54</sup> (0.000)	1.844 <sup>71</sup> (0.000)	166.28 (0.000)
<b>Arellano-Bond test AR(1) (z, p&gt; z )</b>	-2.76 (0.006)	-1.24(0.215)	-1.94 (0.052)
<b>Arellano-Bond test AR(2) (z, p&gt; z )</b>	0.09 (0.924)	-0.15(0.879)	0.86 (0.388)
<b>Hansen test (Chi-square, p&gt; Chi<sup>2</sup> )</b>	12.46 (0.771)	8.18(0.516)	3.11 (0.795)

The estimated coefficients are shown. CEO.PAY is the logarithm of the CEO's total compensation; FIX.CEO.PAY is the ratio between the CEO's total fixed compensation and the CEO's total compensation; VAR.CEO.PAY is the ratio between the CEO's total variable compensation and the CEO's total compensation; INST is the proportion of institutional directors on the board; SIZE is the logarithm of total assets; ROA is the operating income before interest and taxes over total assets; CEO\_DUALITY equals 1 if the CEO and president of the board are the same person and 0 otherwise; CEO\_TENURE is the number of years the CEO has held the firm's highest position; CEO.OWN is the percentage of shares held by the CEO; BDMEET is the number of meetings held by the board in a year; INDP is the proportion of independent directors on the board; OWNMAN is the proportion of stocks held by directors. \* p<0.1; \*\*p<0.05; \*\*\*p<0.01.

**Table 4** Results of the GMM regression for pressure-sensitive institutional directors sit on the board of directors.

Variables	Model 1 CEO_PAY	Model 2 FIX_CEO_PAY	Model 3 VAR_CEO_PAY
CEO_PAY(t-1)	0.953*** (0.000)	-	-
FIX_CEO_PAY(t-1)	-	0.109* (0.059)	-
VAR_CEO_PAY(t-1)	-	-	0.091*** (0.007)
SENSIT	-1.498 (0.849)	0.024 (0.954)	-0.034 (0.924)
SENSIT <sup>2</sup>	5.081 (0.691)	-	-
SIZE	0.067 (0.602)	0.029 (0.562)	-0.005 (0.859)
ROA	0.225 (0.107)	-0.160 (0.364)	0.245(0.328)
CEO_DUALITY	0.477 (0.532)	-0.053 (0.598)	-0.026 (0.710)
CEO_TENURE	0.012 (0.910)	-0.061*** (0.001)	0.036* (0.072)
CEO_OWN	-0.042 (0.431)	-0.002 (0.610)	-0.001 (0.717)
BDMEET	-0.104 (0.350)	-0.002 (0.950)	0.028 (0.321)
INDP	1.619 (0.547)	0.942 (0.232)	-0.148 (0.824)
OWNMAN	0.059 (0.971)	0.822 (0.247)	-0.122 (0.796)
<b>Year effects</b>	Yes	Yes	Yes
<b>Wald test (Chi-square, p&gt; Chi<sup>2</sup> )</b>	4.207*01 (0.000)	1.135*74 (0.000)	203*49 (0.000)
<b>Arellano-Bond test AR(1) (z, p&gt; z )</b>	-2.70 (0.007)	-1.93 (0.054)	-1.82 (0.069)
<b>Arellano-Bond test AR(2) (z, p&gt; z )</b>	-1.13 (0.259)	-1.44 (0.150)	-0.22 (0.830)
<b>Hansen test (Chi-square, p&gt; Chi<sup>2</sup> )</b>	14.29 (0.428)	4.78 (0.853)	2.16 (0.904)

The estimated coefficients are shown. CEO\_PAY is the logarithm of the CEO's total compensation; FIX\_CEO\_PAY is the ratio between the CEO's total fixed compensation and the CEO's total compensation; VAR\_CEO\_PAY is the ratio between the CEO's total variable compensation and the CEO's total compensation; SENSIT is the proportion of the board directors who are representative of pressure-sensitive institutional investors; SIZE is the logarithm of total assets; ROA is the operating income before interest and taxes over total assets; CEO\_DUALITY equals 1 if the CEO and president of the board are the same person and 0 otherwise; CEO\_TENURE is the number of years the CEO has held the firm's highest position; CEO\_OWN is the percentage of shares held by the CEO; BDMEET is the number of meetings held by the board in a year; INDP is the proportion of independent directors on the board; OWNMAN is the proportion of stocks held by directors. \* p<0.1; \*\*p<0.05; \*\*\*p<0.01.

on boards reduces the CEO total compensation, but when the percentage of such directors reaches a certain point, they will be more likely to support a higher CEO total pay. This nonlinear relation is in line with previous studies (Chirinko et al., 1999; Jara-Bertin et al., 2012; Nvasssi and Naiker, 2006; Zou, 2010), which show that institutional directors may play two opposite roles: at low levels of representation, monitoring activities are undertaken by institutional directors, which reduce CEO compensation (e.g., Almazán et al., 2005; Ezzeddine and Lamia, 2006; Firth et al., 2007; Ning et al., 2015; Sánchez-Marín et al., 2011). However, these directors increase CEO compensation (Crocí et al., 2012; Feng et al., 2010; Fernandes et al., 2012) when their presence on boards reaches a certain threshold, as they may collude with CEOs and be used to further the CEOs' own ends. Earlier evidence supports these findings and the presence of a nonlinear relationship between institutional directors and the CEO's total compensation. This evidence suggests the validity of both the monitoring and the entrenchment hypotheses.

In models 2 and 3 in Table 3, we analyze how institutional directors affect the CEO's fixed and variable compensation, respectively. The linear INST variable is positive and significantly related to the proportion of the CEO's fixed compensation in model 2. In model 3, the linear INST variable is negative and significantly associated with the proportion of the CEO's variable compensation. These findings support the hypothesis H1b, suggesting that institutional directors on boards are more likely to increase the CEO's

fixed compensation and to decrease the CEO's variable compensation, consistent with prior evidence (Crocí et al., 2012; Ke et al., 1999). Variable compensation paid to the CEO may cause an increase in the CEO's entrenchment and, as a result, the CEO may act against the shareholders' interests. An effective monitoring role played by institutional directors may imply that they prefer CEO fixed compensation rather than CEO variable compensation since as corporate governance mechanisms, institutional directors and CEO variable compensation may be substitutes for each other. Concerning the control variable, firm size is positively associated with CEO\_PAY, and CEO\_TENURE negatively impacts the CEO's fixed compensation and positively impacts the CEO's variable compensation. The rest of the control variables are not significant.

In Table 4, by using three models, we report the findings of the regressions performed to analyze the impact of pressure-sensitive directors on CEO compensation (total, fixed and variable compensation). In model 1, we analyze the effect of pressure-sensitive directors on the CEO's total compensation. The findings show that pressure-sensitive directors do not have any effect on the CEO's total pay either in a linear or nonlinear way. According to this evidence, the hypothesis H2a cannot be accepted. The lack of a significant effect of pressure-sensitive directors on the CEO's total compensation could be due to several reasons. First, pressure-sensitive directors represent several types of institutional investors (e.g., banks and insurance companies), but their aims differ, and their abilities and incentives in

**Table 5** Results of the GMM regression for pressure-resistant institutional directors sit on the board of directors.

Variables	Model 1 CEO_PAY	Model 2 FIX_CEO_PAY	Model 3 VAR_CEO_PAY
CEO_PAY(t-1)	0.799 *** (0.000)	–	–
FIX_CEO_PAY(t-1)	–	0.157*** (0.001)	–
VAR_CEO_PAY(t-1)	–	–	0.081*** (0.004)
RESIST	–6.294** (0.024)	0.267** (0.017)	–0.105** (0.040)
RESIST <sup>2</sup>	1.947* (0.076)	–	–
SIZE	0.386* (0.055)	0.023 (0.597)	0.042 (0.203)
ROA	0.042 (0.833)	–0.067 (0.711)	0.006 (0.952)
CEO_DUALITY	–0.264 (0.693)	–0.029 (0.742)	0.102 (0.271)
CEO_TENURE	0.046 (0.648)	–0.057*** (0.000)	0.042*** (0.000)
CEO_OWN	0.027 (0.649)	0.002 (0.610)	–0.005 (0.302)
BDMEET	–0.118 (0.402)	0.003 (0.915)	–0.012 (0.646)
INDP	–4.677 (0.143)	0.963 (0.122)	–0.637 (0.166)
OWNMAN	1.604 (0.408)	0.204(0.742)	–0.483* (0.069)
<b>Year effects</b>	Yes	Yes	Yes
<b>Wald test (Chi-square, p&gt; Chi<sup>2</sup> )</b>	1.537'67 (0.000)	1.617'63 (0.000)	352'58 (0.000)
<b>Arellano-Bond test AR(1) (z, p&gt; z )</b>	–2.65 (0.008)	–2.48 (0.013)	–2.82 (0.005)
<b>Arellano-Bond test AR(2) (z, p&gt; z )</b>	0.29 (0.775)	–0.79 (0.429)	–0.78 (0.435)
<b>Hansen test (Chi-square, p&gt; Chi<sup>2</sup> )</b>	5.25 (0.982)	4.08 (0.906)	2.99 (0.935)

The estimated coefficients are shown. CEO\_PAY is the logarithm of the CEO's total compensation; FIX\_CEO\_PAY is the ratio between the CEO's total fixed compensation and the CEO's total compensation; VAR\_CEO\_PAY is the ratio between the CEO's total variable compensation and the CEO's total compensation; RESIST is the proportion of the board directors who are representative of pressure-resistant institutional investors; SIZE is the logarithm of total assets; ROA is the operating income before interest and taxes over total assets; CEO\_DUALITY equals 1 if the CEO and president of the board are the same person and 0 otherwise; CEO\_TENURE is the number of years the CEO has held the firm's highest position; CEO\_OWN is the percentage of shares held by the CEO; BDMEET is the number of meetings held by the board in a year; INDP is the proportion of independent directors on the board; OWNMAN is the proportion of stocks held by the directors. \* p<0.1; \*\*p<0.05; \*\*\*p<0.01.

relation to monitoring the CEO's total compensation may not be the same (Shin and Seo, 2011). Second, these directors are perhaps more interested in matters, such as defining corporate strategies and solving complexity and uncertainty problems, rather than in colluding with managers or controlling managers. Finally, pressure-sensitive directors might use other corporate governance mechanisms rather than the CEO's total pay to collude or monitor CEOs, supporting the idea that corporate governance mechanisms substitute for each other (Rediker and Seth, 1995).

In models 2 and 3, the effect of pressure-sensitive directors on CEO fixed and variable compensation is analyzed. The results find that pressure-sensitive directors are associated neither with the fixed nor with the variable components of the CEO's compensation. Thus, hypothesis H2c can partially be rejected. The arguments provided above to justify the preceding findings can also be used here. Focusing on the control variables, CEO tenure also negatively affects CEO fixed compensation and positively affects CEO variable compensation. None of the other control variables are significant.

In Table 5, also by using three models, we report the findings of the regressions estimated to analyze the impact of pressure-resistant directors on CEO compensation (total, fixed and variable compensation). In model 1, we analyze the effect of pressure-resistant directors on the CEO's total compensation. The evidence shows that pressure-resistant directors behave as institutional directors as a whole. They negatively impact up to a certain threshold

CEO total compensation: beyond this threshold, the addition of more pressure-resistant directors on boards increases the CEO total pay. In this regard, hypothesis H2b can be accepted. Our evidence is consistent with Jara-Bertin et al. (2012), Jiao and Ye (2013) and Navissi and Naiker (2006), who report a nonlinear association between pressure-resistant directors and company value. The findings support the thesis that up to a certain critical value, pressure-resistant institutional directors are an effective mechanism in mitigating agency problems and in reducing the CEO total pay. However, beyond a critical point, the incorporation of more pressure-resistant directors on boards will increase the CEO's total pay, as these directors begin to play an entrenchment role rather than a monitoring role.

In models 2 and 3 in Table 5, the impact of pressure-resistant directors on the CEO's fixed and variable pay is examined. The results show that pressure-resistant directors on boards positively impact the CEO's fixed pay, but negatively impact the CEO's variable compensation, consistent with the roles played by institutional directors as a whole. Hypothesis H2c can also be partially accepted. The explanation for this evidence is provided above. The control variables show that firm size has a positive effect on CEO total compensation, CEO tenure has a negative impact on CEO fixed compensation and a positive impact on CEO variable compensation, and the proportion of shares held by the directors has a negative impact on CEO variable compensation. The remainder of the control variables are not significant.

## Conclusions

The purpose of this research is to study how the presence of institutional directors on Spanish boards influences CEO compensation (total, fixed and variable). First, we have analyzed the impact of institutional directors as a whole on CEO compensation (total, fixed and variable). Next, the institutional directors have been classified as pressure-resistant directors and pressure-sensitive directors, according to whether they have only an investment relationship with the firm or both a business and investment relationship, respectively. For pressure-sensitive and pressure-resistant directors, we also conduct the same analysis followed for institutional directors as a whole.

Our results show that depending on the proportion of their representation on boards, institutional directors and pressure-resistant directors on boards may perform two opposite roles. Institutional and pressure-resistant directors decrease CEO total compensation, but when their presence on boards reaches a certain point, they will be more likely to support a higher total pay for a CEO. This association shows a nonlinear relationship between institutional and pressure-resistant directors and the CEO's total compensation. Opposite to our predictions, pressure-sensitive directors do not affect the CEO's total compensation either in a linear or nonlinear way. Concerning the CEO's compensation structure (fixed and variable), the findings evidence that institutional and pressure-resistant directors enhance fixed compensation and decrease variable pay, while pressure-sensitive directors do not have an effect either on fixed or on variable compensation. These findings suggest that institutional and pressure-resistant directors might play a monitoring role and might also engage in collusion with CEOs, exhibiting behavior that is associated with the best and worse practices of corporate governance, respectively.

This research contributes to the growing literature on the role of institutional directors in corporate governance in several ways. First, we show that institutional directors as a whole affect CEO compensation. However, when they are classified into pressure-resistant and pressure-sensitive institutional directors, the findings show that they do not behave in the same manner in relation to CEO total compensation: pressure-resistant directors have an effect on CEO total compensation and pressure-sensitive directors do not. This evidence supports the argument that institutional directors cannot be considered as a uniform group (Almazán et al., 2005; Cornett et al., 2007). The different ways in which pressure-sensitive and pressure-resistant directors can engage in corporate governance (López-Iturriaga et al., 2015) are evidenced by this research. Second, our results show that the monitoring hypothesis prevails as the presence of institutional and pressure-resistant directors on boards increases, but when their presence on the board reaches a certain threshold, the entrenchment hypothesis prevails. Third, the results show a link between boards of directors and CEO compensation. In this regard, our evidence supports the view that compensation is a mechanism for controlling and disciplining CEOs. Institutional and pressure-resistant directors can enhance the CEOs' monitoring in a substitutive or complementary manner. Fourth,

most research on CEO compensation is focused on the US and UK (Conyon et al., 2011; Tosi et al., 2000). Thus, we extend the analysis to Spain because it is characterized by low legal investor protection, a bank-orientated system and is based on civil law. Given the differences between the corporate governance systems in the countries in the existing studies, the conclusions of existing research are not applicable to Spain. Finally, on the one hand, this research is relevant because we show the relationship between institutional, pressure-sensitive institutional and pressure-resistant institutional directors and CEO compensation in the Spanish context; on the other hand, this research is relevant because we extend a nonlinear association to such relations.

Some implications for the discussion on corporate governance can be drawn from the results presented here. First, institutional directors affect corporate governance, particularly CEO compensation. However, their impact differs when they are classified as pressure-resistant and pressure-sensitive directors. The type of institutional directors must be considered by policymakers when they make recommendations on board composition. Second, due to the nonlinear relationship, while a balanced proportion of institutional and pressure-resistant directors can reduce CEO pay, a high or low percentage of pressure-sensitive directors on boards does not result either in higher or in lower CEO compensation. Our findings suggest that pressure-sensitive directors perhaps perform more a counseling role rather than a supporting or monitoring role. Third, in contrast with past research (García-Osma and Gill de Albornoz, 2007), which shows the lack of effect of these directors on corporate governance, the findings report that independent directors on boards improve corporate governance since their presence reduces CEO pay. Therefore, policymakers should pay more attention to the role played by these directors when they suggest board composition. Finally, the findings point to the potential for CEOs to use a weak corporate governance structure for their own benefit, thereby impairing the shareholders' wealth.

This paper has the following limitation. Several factors have been controlled, as they may affect CEO compensation. Such factors have been selected according to theory and earlier empirical research, but it is probable that other unknown features not taken into account in this study may influence CEO compensation.

This research could lead to further investigations in the future. First, the creation of an appointment and remuneration committee has recently become mandatory by law in Spain. It will be necessary to determine how its composition, particularly in terms of institutional directors, influences CEO compensation. Second, the Spanish economy is characterized by smaller and medium-sized companies (SMEs). In this vein, how institutional directors exert an impact on corporate governance, specifically regarding CEO compensation, is a matter requiring further study. Third, in this paper, the relationship between institutional directors and the CEO pay structure has been analyzed in a linear way, but it would be interesting to extend this analysis to a nonlinear way. Finally, the effect on CEO compensation revealed by disentangling cases of percentages of institutional directors appointed by one or different



institutional investors may also be an engaging issue to address.

## Conflict Of Interest

The authors declare that they have no conflict of interest

## Acknowledgements

The authors acknowledge financial support from the Spanish Ministry of Economy, Industry and Competitiveness for research project ECO 2017-82259-R and from the University Jaue I for the research project UJI-B2018-15. Finally, they would also like to thank the Editor, Prof. Xosé H. Vázquez, for his constructive suggestions, which helped us to improve the final version of the manuscript.

## References

- Almazán, A., Hartzell, J.C., Starks, L.T., 2005. Active institutional shareholders and costs of monitoring: evidence from executive compensation. *Financial Management* 34 (4), 5–34.
- Álvarez, D., Neira, E., 2006. CEO power and CEO stock options design. *Irish Journal of Management* 27 (2), 1–24.
- Anderson, R.C., Bizjak, J.M., 2003. An empirical examination of the role of the CEO and the compensation committee in structuring executive pay. *Journal of Banking and Finance* 27 (7), 1323–1348.
- Archambeault, D., Dezoort, F.T., 2001. Auditor opinion shopping and the audit committee: an analysis of suspicious auditor switches. *International Journal of Auditing* 5 (1), 33–52.
- Arellano, M., 2003. *Panel data econometrics*. Oxford University Press, Oxford.
- Arellano, M., Bond, S., 1991. Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Review of Economic Studies* 58, 277–297.
- Ayadi, N., Boujèlbène, Y., 2013. The influence of the board of directors on the executive compensation in the banking industry. *Global Business and Management Research: An International Journal* 5 (2&3), 83–104.
- Baixauli-Soler, J.S., Sánchez-Marín, G., 2011. Organizational governance and TMT pay level adjustment. *Journal of Business Research* 64, 862–870.
- Bebchuk, L.A., Fried, J.M., 2003. Executive compensation as an agency problem. *Journal of Economic Perspectives* 17 (3), 71–92.
- Bebchuk, L. and Grinstein, Y., 2005. The growth of executive pay. Discussion paper 510 Harvard Law School. [http://www.law.harvard.edu/programs/olin\\_center/papers/pdf/Bebchuk\\_et%20al.510.pdf](http://www.law.harvard.edu/programs/olin_center/papers/pdf/Bebchuk_et%20al.510.pdf) Accessed date: January 2014.
- Bennedsen, M., Wolfenzon, D., 2000. The balance of power in closely held corporations. *Journal of Financial Economics* 58, 113–139.
- Bennett, J., Sias, R., Starks, L.T., 2003. Greener pastures and the impact of dynamic institutional preferences. *The Review of Financial Studies* 16 (4), 1203–1238.
- Bergstresser, D., Philippon, T., 2006. CEO incentives and earnings management: evidence from the 1990s. *Journal of Financial Economics* 80, 511–529.
- Bertrand, M., Mullainathan, S., 2001. Are CEOs rewarded for luck? The ones without principals are. *The Quarterly Journal of Economics* 116, 901–932.
- Booth, J.R., Deli, D.N., 1999. On executives of financial institutions as outside directors. *Journal of Corporate Finance*. 5, 227–250.
- Blundell, R., Bond, S., 1998. Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics* 87, 115–143.
- Byrd, D.T., Mizruchi, M., 2005. Bankers on the board and the debt ratio of firms. *Journal of Corporate Finance* 11 (1–2), 129–173.
- Brewer, M.B., 1991. The social self: on being the same and different at the same time. *Personality and Social Psychology Bulletin* 17 (5), 475–482.
- Brickley, J.A., Lease, R.C., Smith, C.W., 1988. Ownership structure and voting on antitakeover amendment. *Journal of Financial Economics* 20, 267–292.
- Canals, J., 1995. Bancos universales y bancos especializados Los límites de la diversificación bancaria. *Papeles de Economía Española* 659, 125–141.
- Carleton, W.T., Nelson, J.M., Weisbach, M.S., 1998. The influence of institutions on corporate governance through private negotiations: evidence from TIAA-CREF. *The Journal of Finance* LIII (4), 1335–1362.
- CBGSC, 2015. Código de Buen Gobierno de las Sociedades Cotizadas. Comisión Nacional del Mercado de Valores (CNMV), [www.cnmv.es](http://www.cnmv.es).
- Chen, X., Harford, J., Li, K., 2007. Monitoring: which institutions matter? *Journal of Financial Economics* 86, 279–305.
- Cheng, S., Firth, M., 2005. Ownership, corporate governance and top management pay in Hong Kong. *Corporate Governance: an International Review* 13 (2), 291–302.
- Chirinko, R.S., Van Ees, H., Garretsen, H. and Sterken, E., 1999. Firm performance, financial institutions and corporate governance in the Netherlands. CESifo working paper, 210, [http://www.researchgate.net/publication/5002601\\_Firm\\_Performance\\_Financial\\_Institutions\\_and\\_Corporate\\_Governance\\_in\\_the\\_Netherlands](http://www.researchgate.net/publication/5002601_Firm_Performance_Financial_Institutions_and_Corporate_Governance_in_the_Netherlands) Posted date: July 2015.
- Claessens, S., Djankow, S., Fan, J., Lang, L., 2002. Disentangling the incentive and entrenchment effects of large shareholding. *The Journal of Finance* 57 (6), 2741–2771.
- Conyon, M.J., Core, J.E., Wayne, R.G., 2011. Are US CEOs paid more than UK CEOs? Inferences from risk-adjusted pay. *Review of Financial Studies* 24, 402–438.
- Core, J.E., Holthausen, R.W., Larcker, D.F., 1999. Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics* 51, 371–406.
- Cornett, M.M., Marcus, A.J., Saunders, A., Tehranian, H., 2007. The impact of institutional ownership on corporate operating performance. *Journal of Banking and Finance* 31 (6), 1771–1794.
- Crespí, R., García-Cestona, M.A., Salas, V., 2004. Governance mechanisms in Spanish Banks. Does Ownership matter? *Journal of Banking and Finance* 28, 2311–2330.
- Croci, E., Gonenc, H., Ozkan, N., 2012. CEO compensation, family control and institutional investors in continental Europe. *Journal of Banking & Finance* 36, 3318–3335.
- Cubbin, J., Leech, R., 1983. The effects of shareholding dispersion on the degree of control in British companies: theory and measurement. *The Economic Journal* 93 (370), 351–369.
- CUBG, 2006. Código Unificado de Buen Gobierno de las Sociedades Cotizadas (Conthe Code). Comisión Nacional del Mercado de Valores (CNMV), [www.cnmv.es](http://www.cnmv.es).
- Cuervo, A., 2002. Corporate governance mechanisms: A plea for less code of good governance and more market control. *Corporate Governance: an International Review* 10 (2), 84–93.
- David, P., Kochhar, R., 1996. Barriers to effective corporate governance by institutional investors: implications for theory and practice. *European Management Journal* 14 (5), 457–466.
- David, P., Kochhar, R., Levitas, E., 1998. The effect of institutional investors on the level and mix of CEO compensation. *Academy of Management Journal* 41 (2), 200–208.
- De Andrés, P., Azofra, V., López, F.J., 2005. Corporate boards in OECD countries: size, composition, compensation,

- functioning and effectiveness. *Corporate Governance: An International Review* 13, 197–210.
- De Andrés, P., Arranz-Aperte, L., Rodríguez-Sanz, J.A., 2017. Independent versus non-independent outsider directors in European companies: Who has a say on CEO compensation? *BRQ Business Research Quarterly* 20, 79–95.
- De Andrés, P., Azofra, V., Tejerina, F., 2010. The bank: controller or predator in the governance of nonfinancial firm? *Investment Management and Financial Innovation* 7 (1), 24–36.
- De Miguel, A., Pindado, J., De la Torre, C., 2004. Ownership structure and firm value: new evidence from Spain. *Strategic Management Journal* 25 (12), 1199–1207.
- Dong, M., Ozkan, A., 2008. Institutional investors and director pay: an empirical study of UK companies. *Journal of Multinational Financial Management* 18, 16–29.
- Ezzeddine, A. and Lamia, Ch. 2006. The impact of Ownership on CEO compensation: Evidence from Canada. 6th Global Conference on Business & Economics, [http://www.gcbe.us/6th\\_GCBE/data/confcd.htm](http://www.gcbe.us/6th_GCBE/data/confcd.htm) Posted date: October 2006.
- Faccio, M., Lang, L.H.P., 2002. The ultimate ownership of Western European corporations. *Journal of Financial Economics* 65, 365–395.
- Fama, E.F., Jensen, M.C., 1983. Separation of ownership and control. *Journal of Law & Economics* 26, 301–325.
- Feng, Z., Ghosh, C., He, F., 2010. Institutional monitoring and REIT CEO compensation. *The Journal of Real Estate Finance and Economics* 40 (4), 446–479.
- Fernandes, N.G., Ferreira, M.A., Matos, P.P., and Murphy, K.J. 2012. Are U.S. CEOs paid more? New international evidence. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2159119](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2159119) Posted date: October 2012.
- Fernández-Alles, M., Cuevas-Rodríguez, G., Valle-Cabrera, R., 2006. How symbolic remuneration contributes to the legitimacy of the company: an institutional explanation. *Human Relations* 59 (7), 961–992.
- Ferreira, M.A., Matos, P., 2008. The colours of investors' money: the role of institutional investors around the world. *Journal of Financial Economics* 88, 499–533.
- Firth, M., Fung, P.M.Y., Rui, O.M., 2007. How ownership and corporate governance influence chief executive pay in China's listed firms. *Journal of Business Research* 60, 776–785.
- García Osma, B., Gill de Albornoz Noguera, B., 2007. The effect of the boards composition and its monitoring committees on earnings management: evidence from Spain. *Corporate Governance: An International Review* 15 (6), 1413–1428.
- García-Meca, E., López-Iturriaga, F., Tejerina-Gaite, F., 2013. Institutional investors on board. Do they influence corporate finance? Working paper, Technical University of Cartagena and University of Valladolid, Spain.
- Gerhart, B., Milkovich, G.T., 1990. Organizational differences in managerial compensation and firm performance. *Academy of Management Journal* 33, 663–691.
- Gillan, S., Starks, L., 2000. Corporate governance proposal and shareholder activism: the role of institutional investors. *Journal of Financial Economics* 57 (2), 275–305.
- Gomes, A. and Novaes, W. 2005. Sharing of control versus monitoring as corporate governance mechanism. Penn Institute for Economic Research (PIER) working paper 01-029, [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=277111](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=277111) Posted date: July 2001.
- Gómez-Mejía, L.R., Larraza-Kintana, M., Madri, M., 2003. The determinants of executive compensation in family-controlled public corporations. *Academy of Management Journal* 46 (2), 226–237.
- Gorton, G., Schmid, F., 2000. Universal banking and the performance of German firms. *Journal of Financial Economics* 58 (1), 29–80.
- Hartzell, J.C., Starks, L.T., 2003. Institutional investors and executive compensation. *Journal of Finance* 58 (6), 2351–2374.
- Heidrick and Struggles 2011. European Corporate Governance Reports 2011: Challenging board performance. Heidrick and Struggles, <http://www.heidrick.com/~media/Publications%20and%20Reports/HS.EuropeanCorpGovRpt2011.pdf> Accessed date: January 2014.
- Hermalin, B.E., Weisbach, M.S., 2003. Boards of directors as an endogenously-determined institution: a survey of the economic literature. *FRBNY Economic Policy Review* 9 (1), 7–26.
- Hoskisson, R.E., Hitt, M.A., Johnson, R.A., Grossman, W., 2002. Conflicting voices: the effects of institutional ownership heterogeneity and internal governance on corporate innovation strategies. *The Academy of Management Journal* 45 (4), 697–716.
- Jara-Bertín, M., López-Iturriaga, F., López de Foronda, O., 2008. The contest to the control in European family firms: How other shareholders affect firm value. *Corporate Governance: An International Review* 16 (3), 146–159.
- Jara-Bertín, M., López-Iturriaga, F.J., López-de-Foronda, O., 2012. Does the influence of institutional investors depend on the institutional framework? An international analysis. *Applied Economics* 44, 265–278.
- Jensen, M.C., Mecking, W.H., 1976. Theory of the firm: managerial behaviour, agency cost and ownership structure. *Journal of Financial Economics* 3 (4), 305–360.
- Jiao, Y., Ye, P., 2013. Public pension fund ownership and firm performance. *Review of Quantitative Finance and Accounting* 40 (3), 571–590.
- Johnson, S., La Porta, R., López de Silanes, F., Shleifer, A., 2000. Tunneling. *The American Economic Review* 90 (2), 22–27.
- Khan, R., Dharwadkar, R., Brandes, P., 2005. Institutional ownership and CEO compensation: a longitudinal examination. *Journal of Business Research* 58, 1078–1088.
- Ke, B., Petroni, K., Safieddine, A., 1999. Ownership concentration and sensitivity of executive pay to accounting performance measures: Evidence from publicly and privately-held insurance companies. *Journal of Accounting and Economics* 28, 185–209.
- Koh, P., 2003. On the association between institutional ownership and aggressive corporate earnings management in Australia. *The British Accounting Review* 35 (2), 10–128.
- Kumar, N., Singh, J.P., 2012. Outside directors, corporate governance and firm performance: empirical evidence from India. *Asian Journal of Finance & Accounting* 4 (2), 39–55.
- Lee, S., Chen, H., 2011. Corporate governance and firm value as determinants of CEO compensation in Taiwan 2SLS for panel data model. *Management Research Review* 34 (3), 252–265.
- Lin, D., Lin, L., 2014. The interplay between director compensation and CEO compensation. *The International Journal of Business and Finance Research* 8 (2), 11–26.
- López-Iturriaga, F., García-Meca, E., Tejerina-Gaite, F., 2015. Institutional directors and board compensation: Spanish evidence. *BRQ Business Research Quarterly* 18 (3), 161–173.
- Maury, B., Pajuste, A., 2005. Multiple large shareholders and firm value. *Journal of Banking and Finance* 29, 1813–1834.
- Merino, E., Manzaneque, M., Banegas, R., 2009. Retribución y composición del consejo de administración Evidencia empírica para las empresas cotizadas españolas. *Pecunia* 8, 203–234.
- Morck, R., Nakamura, M., 1999. Banks and corporate control in Japan. *Journal of Finance* 54, 319–339.
- Morck, R., Nakamura, M., Shivdasani, A., 2000. Banks, ownership structure, and firm value in Japan. *The Journal of Business* 73 (4), 539–567.
- Navissi, F., Naiker, V., 2006. Institutional ownership and corporate value. *Managerial Finance* 32 (3), 247–256.
- Ning, Y., Hu, Garza-Gómez, X.X., 2015. An empirical analysis of the impact of large changes in institutional ownership on CEO

- compensation risk. *Journal of Economics and Finance* 39 (1), 23–47.
- O'Reilly III, Ch.A., Main, B.G.M., 2010. Economic and psychological perspectives on CEO compensation: a review and synthesis. *Industrial and Corporate Change* 19 (3), 675–712.
- Ozkan, N., 2007. Do corporate governance mechanism influence CEO compensation? An empirical investigation of UK companies. *Journal of Multinational Financial Management* 17 (5), 349–364.
- Ozkan, N., 2011. CEO compensation and firm performance: an empirical investigation of UK panel data. *European Financial Management* 17 (2), 260–285.
- Parthiban, D., Kochhar, R., Levitas, E., 1998. The effect of institutional investors on the level and mix of CEO compensation. *Academy of Management Journal* 41 (2), 200–208.
- Peng, L., Röell, A.A., 2008. Executive pay and shareholder litigation. *Review of Finance* 12, 141–181.
- Petra, S., Dorata, N., 2008. Corporate governance and chief executive officer compensation. *Corporate Governance* 8 (2), 141–152.
- Pound, J., 1988. Proxy contest and the efficiency of shareholder oversight. *Journal of Financial Economics* 20, 237–265.
- Pucheta-Martínez, M.C., García-Meca, E., 2014. Institutional investors on boards and audit committees and their effects on financial reporting quality. *Corporate Governance: An International Review* 22 (4), 347–363.
- Rediker, K.J., Seth, A., 1995. Boards of directors and substitution effects of alternate governance mechanisms. *Strategic Management Journal* 16 (2), 85–99.
- Roe, M.J. 2003. Political determinant of corporate governance. Discussion paper 451, Harvard Law School [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=472366](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=472366) Posted date: January 2004.
- Ruiz-Mallorquí, M.V., Santana-Martín, D.J., 2009. Ultimate institutional owner and takeover defenses in the controlling versus minority shareholders context. *Corporate Governance: An International Review* 17 (2), 238–254.
- Ruiz-Mallorquí, M.V., Santana-Martín, D.J., 2011. Dominant institutional owners and firm value. *Journal of Banking and Finance* 35 (1), 118–129.
- Ryan, L.V., Scheider, M., 2002. The antecedents of institutional investor activism. *Academy of Management Review* 27 (4), 554–573.
- Sánchez-Marín, G., Baixauli-Soler, J.S., Lucas-Pérez, M.E., 2011. Ownership structure and board effectiveness as determinants of TMT compensation in Spanish listed firms. *Journal of Business Economics and Management* 12 (1), 92–109.
- Shin, J.Y., 2011. Institutional investment horizon and CEO compensation. *Seoul Journal of Business* 17 (1), 93–135.
- Shin, J.Y., Seo, J., 2011. Less pay and more sensitivity? Institutional investor heterogeneity and CEO pay. *Journal of Management* 37 (6), 1719–1746.
- Shleifer, A., Vishny, R., 1986. Large shareholders and corporate control. *Journal of Political Economy* 94, 461–488.
- Thomsen, S., Pedersen, T., 2000. Ownership structure and economic performance in the largest European companies. *Strategic Management Journal* 21, 689–705.
- Tihanyi, L., Johnson, R., Katz, J., Gómez-Mejía, L.R., 2003. Institutional ownership differences and international diversification: the effects of boards of directors and technological opportunity. *Academy of Management Journal* 46, 195–211.
- Tosi, H.L., Werner, S., Katz, J.P., Gómez-Mejía, L.R., 2000. How much does performance matter? a meta-analysis of CEO pay studies. *Journal of Management* 26 (2), 301–339.
- Tribó, J.A., Casasola, M.J., 2010. Banks as firms' blockholders: a study in Spain. *Applied Financial Economics* 20, 425–438.
- Van der Stede, W.A., 2013. Discussion of "The role of performance measures in the intertemporal decisions of business unit managers". *Contemporary Accounting Research* 30 (3), 962–969.
- Versteegen, L., Schneider, M., 2002. The antecedents of institutional investor activism. *The Academy of Management Review* 27 (4), 554–573.
- Victoravich, L.M., Xu, P., Gan, H., 2013. Institutional ownership and executive compensation: evidence from US banks during the financial crisis. *Managerial Finance* 39 (1), 28–46.
- Werner, S., Tosi, H.L., Gómez-Mejía, L.R., 2005. Organizational governance and employee pay: How ownership structure affects the firm's compensation strategy. *Strategic Management Journal* 26, 377–384.
- Yeh, Y., 2005. Do controlling shareholders enhance corporate value? *Corporate Governance: An International Review* 13 (2), 313–325.
- Zhang, X.M., Bartol, K.M., Smith, K.G., Pfarrer, M.D., Khanin, D.M., 2008. CEOs on the edge: earnings manipulation and stock-based incentive misalignment. *Academy of Management Journal* 51 (2), 241–258.
- Zou, H., 2010. Hedging affective firm value via financing via financing and investment: evidence from property insurance use. *Financial Management* 39 (3), 965–996.