ENGAGEMENT OF DIRECTORS REPRESENTING LARGE INVESTORS ON ENVIRONMENTAL REPORTING

ABSTRACT

This paper aims at examining the role performed by representatives of large investors on environmental reporting, since they represent the highest proportion of directors among European countries. Additionally, we make a distinction between those representatives of controlling shareholders appointed by bank and insurance companies and those appointed by mutual funds, investment funds and pension funds, because they have different motivations, characteristics and incentives and, consequently, their role on boards and their influence on environmental disclosure may be dissimilar, as our results suggest. Our research offers a deep analysis revealing the role played by representatives of controlling owners in listed firms' decisions to disclose environmental information. Thus, our findings show the engagement with the stakeholders of a particular type of directors sits on boards concerning environmental disclosure.

Key words: Stakeholder theory, legitimacy theory, large investors, environmental disclosure.

1. INTRODUCTION

Companies are paying a lot of attention to the reporting of environmental information due to the several benefits associated with doing so. In this sense, environmental issues have been a matter of concern for society and governments, pressurising firms into decreasing their environmental impact, which is related to, among other things, social responsibility. In addition, more and more firms now recognise that if they want their business to be a success, they must be seen to be environmentally committed (Hassan and Ibrahim, 2012). For this reason, firms are more likely to voluntarily disclose information about environmental matters.

In this context, firms must have highly efficient governance systems in order to promote responsible and ethical business management, which is demanded by the stakeholders of the corporations, principally to prevent fraud. In line with this, authors such as Goodstein et al. (1994), Sánchez-Ballesta and García-Meca (2007) and Ballesteros et al. (2015) discuss the relation between corporate governance and CSR disclosure. Furthermore, most of the attention of prior literature has been focused on board size and composition.

The role played by the board of directors is crucial (Goodstein et al., 1994; Pfeffer, 1972) because directors drive the decisions of the company such as reporting environmental information. In this sense, disclosing environmental issues drives firms to increase firm value (Blacconiere and Patten, 1994; Botosan, 1997) and reputation (Dhaliwal et al., 2012) and to affect board structure (Ballesteros et al., 2015) and profitability (Aupperle et al., 1985), among other things. However, there exists a gap in the prior literature regarding the relation between a firm's board composition and its environmental disclosure.

Institutional directors have access to boards as they have shares or represent institutional investors. Prior literature (Zahra and Stanton, 1988; Almazán et al., 2005; Lopez-Iturriaga et al., 2015) suggests that these directors demonstrate active behaviour by playing a monitoring role over managers, and they have an interest in promoting environmental disclosure due to their concern for their reputation, among other things. Furthermore, institutional directors are dominant shareholders, or their representatives, and are characterised by a long-term orientation. Therefore, they may press managers to act in favour of stakeholders' interests, performing not only a supervisory role over the management team, but also disciplining and influencing it (Cornett et al., 2007). In this regard, institutional directors have an impact on several of a firm's characteristics, such as corporate value (García-Meca and Pucheta-Martínez, 2017), dividend policy (Pucheta-Martínez and López Zamora, 2016) and quality of financial information (Ajinkya et al., 2005).

However, within the group of institutional directors, it is also important to differentiate between pressure-sensitive institutional directors and pressure-resistant institutional directors, since they may play different roles in a firm's business decisions given their different orientations and motivations (Ferreira and Matos, 2008; Ramalingegowda and Yu, 2012). In this sense, pressure-sensitive institutional directors (banks and insurance companies) are those who have commercial and investment relations with the firm, while pressure-resistant institutional directors (mutual funds, investment funds, pension funds and venture capital firms) are those who do not have any business links with the company, but rather an investment relationship.

Hence, given the relevance for stakeholders of disclosing environmental information and the role performed by institutional directors in companies, we aim to examine how these directors on boards affect firms' environmental reporting, filling the gap on this topic found in the previous literature. Additionally, we also analyse whether pressure-sensitive and pressure-resistant institutional directors demonstrate similar behaviour, or not, when it comes to environmental disclosure.

This study contributes to prior literature in several aspects. First, our findings help to understand how board composition moves firms to disclose environmental information. In this respect, we show how institutional directors will positively influence firm's decisions, and we therefore reinforce the hypothesis that institutional directors have incentives to press managers to report environmental issues. Second, we provide a new insight into the kind of role played by institutional directors in firms' decisions to disclose environmental information. We have demonstrated that institutional directors cannot be analysed as a whole due to pressure-resistant and pressure-sensitive institutional directors having different characteristics and incentives, which affect decisions to voluntarily report information such as that relating to the environment. Third, we strengthen the idea that those board directors with long-term orientations and concerns regarding their reputation and that of the firm are more active in promoting ethical behaviour and, hence, are more likely to encourage environmental disclosure. Finally, the findings of this research may be useful for practitioners aiming to improve their environmental communication with stakeholders. Incorporating long-term horizon directors on boards may help in this respect.

This paper is structured as follows. The second section offers the institutional setting. The third section explains the theoretical background and the hypotheses. The fourth section shows the sample, methodology and variables used in the study. The fifth section analyses the findings, and the sixth section discusses the findings, conclusions and limitations.

2. INSTITUTIONAL CONTEXT

In Spain, only a small number of researchers focus on environmental disclosure matters, and most of this research has been developed in the accounting area. In this sense, the papers of Carmona and Carrasco (1988), Moneva and Llena (1996, 2000), Larrinaga et al. (2002) and Garcia-Ayuso and Larrinaga (2003) suggest that there has been a gradual rise in environmental disclosure among Spanish firms. This rise could be explained by firms' response to the pressure exerted by stakeholders in order to prolong their stay in the market.

In order to guide and promote companies in being transparent and ethical, the Spanish Conthe Code (2015) integrates some recommendations about CSR, such as CSR reporting and environmental matters. Moreover, there is a law that regulates public disclosure and access to environmental information (Law 27/2006, of July 18). The aim of this law is to guarantee free access to information, thus promoting transparency. In addition, Law 27/2006, modified in January of 2008, establishes the minimum contents to be published (article 7) and includes some previsions in case of an imminent threat to the environment or human health produced by "human activities or natural causes" (article 9). Furthermore, the law of Environmental Responsibility (Law 26/2007, of October 23) is based on the principle of preventing damage and the notion that the "polluter pays". It is important to mention that this law does not protect every single natural resource, but rather those included in the concept of environmental damage, i.e. damage to the sea, water, soil, riverbanks and to Spanish flora and fauna.

According to Sánchez-Ballesta and García-Meca (2005), the characteristics of Spanish corporate governance are as follows: large shareholders on boards, elevated family ownership and ownership concentration, capital markets that are insufficiently developed, one-tier board systems, low legal protection for investors, pyramidal groups, and inactive market control. In this sense, institutional investors, represented by institutional directors, have a high ownership concentration and, therefore, have very strong influence on corporate governance. Furthermore, Spain has the highest percentage of institutional directors (40%) on boards among European countries (Heidrick and Struggles, 2011). As a result, institutional directors are of great importance in the Spanish context.

3. THEORY AND HYPOTHESES

The disclosure of corporate social and environmental information has received a lot of

attention in prior literature (Gray et al., 1995; Mathews, 2004; Beck and Laan, 2008; Brammer and Pavelin, 2008). Authors such as Gray et al. (1995) posit that stakeholder theory and legitimacy theory, among other social-political theories, have the greatest influence on corporate social responsibility reporting research, such as that relating to environmental information.

Thus, in line with most of the previous research focused on environmental disclosure, our analysis is based on stakeholder theory (Kolk and Pinkse, 2007; Prado-Lorenzo et al., 2009; Sarkis et al., 2010; Husted and Allen, 2011; Lee, 2011; Perez-Batres et al., 2012; Yamahaki, 2013; Montiel and Delgado-Ceballos, 2014) and legitimacy theory (Patten, 1991, 1992; Lindblom, 1993; Gray et al., 1995; Walden and Schwartz, 1997; Milne and Patten, 2002; Llena et al., 2007; Ahmad and Mohamad, 2014). Additionally, the paper is also based on agency theory (Ness and Mirza, 1991; Mak, 1991; Haniffa and Cooke, 2002; Akhtaruddin et al., 2009).

Stakeholder theory, developed by Freeman (1984), argues that organisations' responsibilities go beyond the shareholders due to firms having to take into account all stakeholders, not only shareholders. Furthermore, Heath and Norman (2004) affirm that the scandals of recent years have necessitated a revision of the classic statement arguing that shareholders have sufficient power to guarantee their interests because firms' managers are protecting their interests. Shareholders represent just one element of a firm's stakeholders.

Donaldson and Preston (1995) argue that the stakeholder approach goes hand in hand with the creation of governance structures and, therefore, the board of directors becomes a relevant mechanism since it must be able to face stakeholders' demands (Luoma and Goodstein, 1999). Roberts (1992) and Deegan and Blomquist, (2006), among others, state that the pressure exerted by firms' stakeholders acts as a mechanism forcing managers to report environmental information. Furthermore, if a firm's environmental disclosure is confused, the organisation's stakeholders may think that managers are hiding something and, consequently, they might doubt the firm's environmental policies (Depoers et al., 2016). Additionally, Hooghiemstra (2000) posits that environmental disclosure is a very good tool for improving a company's reputation, legitimacy and identity.

In this regard, the board of directors becomes an important instrument in a firm's decision to disclose environmental information, since it is responsible for defending the interests of all stakeholders. For this reason, boards have changed their composition in order to adapt to the new demands of company stakeholders. Moreover, Luoma and Goodstein (1999), Siebens (2002), Matsumura and Shin (2005) and Arjoon (2005) argue that directors

have to promote ethical behaviour in business as they represent all stakeholders of the company, not just the shareholders.

Based on this argument, institutional directors are capable of monitoring managers (Brickley et al., 1988; Pucheta-Martínez and López-Zamora, 2016) and disciplining them (Lee and Roberts, 2015). Furthermore, they are also concerned about their reputation (Zahra et al., 1993; Johnson and Greening, 1999; Webb, 2004; Harjoto and Jo, 2011) and have a long-term perspective (Graves and Waddock, 1994), so they will defend stakeholders' interests and, consequently, may encourage managers to disclose environmental information. This view is supported by Lim et al. (2007), who show that external directors on boards, such as institutional directors, are positively correlated with firms' voluntary disclosure due to their interest in preserving their reputation.

According to legitimacy theory, firms' and society's interests are joined not only by financial issues, but also by contracts (Deegan, 2002). Consequently, if companies want to survive and grow in the market, they should behave in a responsible way (Lindblom, 1993; Archel et al., 2009). Deegan and Blomquist (2006) posit that legitimacy is built on corporate perceptions and, thus, companies have to inform society about their activities, including those involving environmental matters. Prior literature about non-financial disclosure (Deegan, 2002; O'Donovan, 2002; Belal and Momin, 2009; Campbell et al., 2003; Islam and Deegan, 2008, 2010) shows that legitimacy theory is helpful to explain firms' motivations for reporting environmental matters. In this line of thinking, Henderson et al. (2004) posit that the action of reporting environmental information "plays a significant role in maintaining and establishing legitimacy, given that entities need to convey an image that they are operating in alignment with the expectations of the society" (Nurhayat et al., 2016). O'Donovan's (2002) paper is focused on legitimacy theory and gives an insight into how managers behave with respect to environmental information. More concretely, the paper argues that managers are concerned about legitimacy when a firm changes its actions, which explains why managers have incentives to disclose environmental information and social activities. O'Dwyer (2002) supports the perspective that firms' environmental disclosure is just a tactic to influence opinion, thus explaining why organisations are interested in reporting environmental matters. In addition, Cormier and Magnan (2015) find that increased environmental disclosure improves firms' legitimacy.

Brown (2007) argues that "stakeholder and legitimacy theories fall under the umbrella of bourgeois political economy theory, which hypothesizes that disclosure is linked to an interconnection of economic, political and social influences".

Authors such as Worthy and Neuschel (1983) posit that "issues of governance include the legitimacy of corporate power and corporate accountability, to whom and for what the corporation is responsible, and by what standards it is to be governed and by whom" (Haniffa and Cooke, 2005). Given that firms' corporate governance is reflective of their moral character, it is logical to think that board composition will affect the legitimacy of an enterprise.

Regarding board composition, non-executive directors are recommended to supervise firms' overall business management as they are seen as impartial. Institutional directors are more likely to avoid or palliate environmental issues related to an organisation's activities in order to preserve organisational legitimacy (Haniffa and Cooke, 2005). Hence, institutional directors may be interested in establishing and maintaining legitimacy in order to promote ethical behaviour and, as a consequence, they will be more likely to support environmental reporting.

Finally, the agency approach argues that voluntary environmental reporting can be considered a mechanism for reducing agency costs. Boards have a responsibility to monitor managers to ensure that their interests are aligned with the shareholders and, therefore, no conflict of interests will arise (Fligstein and Freeland, 1995). In general terms, external directors on boards, such as institutional directors, might have incentives to reduce litigation risk and the problems associated with asymmetric information (García-Sánchez and Martínez Ferrero, 2017). Furthermore, Ness and Mirza (1991) suggest that "managers will disclose social information only if it increases their welfare, that is, when the benefits of disclosing this information outweigh the associated costs". Consequently, given that managers want to act in line with stakeholders' interests, they will be more likely to disclose environmental information. Thus, institutional directors, due to their above-mentioned characteristics, will press managers to behave in line with stakeholders' interest and, therefore, to increase environmental reporting.

Taking into account the above perspectives, institutional directors may help to prevent boycotts and protect a firm's reputation and, as a result, they may promote voluntary reporting such as that of environmental information (Hill and Snell, 1988), given their long-term orientation (Graves and Waddock, 1994) and their interest in maintaining a good reputation (Johnson and Greening, 1999; Webb, 2004; Harjoto and Jo, 2011). Accordingly, we pose the following hypothesis:

H_1: Institutional directors have a positive influence on environmental disclosure

Prior literature has emphasised that, due to the links that their representatives maintain

with firms, institutional directors do not all behave in the same way (Almazan et al., 2005; Borokhovich et al., 2006; Ferreira and Matos, 2008; Ramalingegowda and Yu, 2012). There are two types of institutional directors: pressure-sensitive and pressure-resistant Dong and Ozkan, 2008; Pucheta-Martínez and López-Zamora, 2016). Pressure-sensitive institutional directors represent institutional investors who maintain two relations with the firms in which they have invested: commercial and investment (banks and insurance firms). In contrast, pressure-resistant institutional directors represent institutional investors who only maintain an investment tie with the organisation, but not a commercial relation (mutual funds, investment funds, pension funds and venture capital firms).

Previous research (David et al., 1998; Almazán et al., 2005) has shown that in order to safeguard business links with the firms they represent, pressure-sensitive institutional directors may prefer not to challenge managers' decisions. In this sense, authors such as Eng (1999) and Johnson Greening (1999) highlight the short-term perspective that this type of director has, given their interest in short-term profitability. For this reason, these directors may not act as an effective monitoring mechanism over managers (Brickley et al., 1988), thus not pressing managers to disclose information about environmental matters.

In addition, Hambrick and D'Abeni (1992) and Daily and Dalton (1994) point out that the importance of a board is "strictly related to its ability to establish linkages with the external environment, through which it may represent the firm in the community, enhancing organizational legitimacy and reputation" (Arena et al., 2015). In this sense, banks and insurance companies may be less concerned about organisational legitimacy and firms' reputations, as they have incentives to be aligned with managers and, thus, have no interest in pressuring managers to disclose environmental information to satisfy stakeholders' demands.

Furthermore, the paper by Arena et al. (2015) suggests that those firms with strong stakeholder orientation will be more proactive in disclosing environmental information in order to "signal future environmental performance". In other words, the stronger a director's stakeholder orientation is, the more likely they are to disclose environmental information. Firms with more pressure-sensitive institutional directors might disclose less environmental information because these firms will have a short-term orientation. Pressure-sensitive institutional directors have a short-term perspective and do not have a strong stakeholder orientation; thus, they will not want managers to spend money on environmental or social aspects because they consider such actions a waste of resources as they return no results in the short term.

In this sense, Ryan and Schneider (2002) found that the short-term perspective of this

type of director is the cause of their lack of concern for the firm's reputation and, thus, they have no incentive to influence managers' business decisions related to disclosure of environmental information. Therefore, investors with a short-term perspective will not be associated with the disclosure of environmental information. Rupley et al. (2012, p. 616) argue that "if short-horizon investors believe firm managers are spending costly resources in creating environmental disclosures that will not benefit them in the short-run, they may act by selling off shares".

In contrast, pressure-resistant institutional directors play a disciplinary and monitoring role over managers (Lopez-Iturriaga et al., 2015), since they represent institutional investors who do not have any commercial ties with the companies in which they have invested and, hence, they are not worried about losing any business links with the company. In this sense, mutual funds, investment funds, pension funds and venture capital firms will be concerned about managers' behaviour because their own reputation is at stake. Thus, given the long-term perspective of pressure-resistant institutional directors (Sethi, 2005), they will pressure managers to behave according to the interests of the stakeholders of the firm and, therefore, there is an increased likelihood of environmental information being disclosed. In addition, Finseth (2010) and Cotter and Najah (2012) report that some pressure-resistant institutional directors push firms to take into account environmental matters, and Johnson and Greening (1999) show that pension funds are positively correlated with matters related with environmental concerns, such as product quality.

Consequently, based on the above arguments, we expect that pressure-sensitive institutional directors and pressure-resistant institutional directors, given their different incentives, will affect a firm's environmental disclosure in different ways.

Thus, we posit the following two hypotheses:

H_{2a}: Pressure-sensitive institutional directors have a negative influence on environmental disclosure.

H_{2b}: Pressure-resistant institutional directors have a positive influence on environmental disclosure.

4. EMPIRICAL DESIGN

4.1 Sample

We use a sample that takes into account the Spanish non-financial listed firms from 2004 to 2013. Financial entities have been removed from the sample because they comply with different accounting rules and their financial statements are not analogous to those of non-financial firms and, as a consequence, they are not comparable (La Porta et al., 2000). Thus, we use an unbalanced panel dataset of 1,092 firm-year observations. Following Arellano (2003), balanced and unbalanced panels are equal in terms of consistency.

To collect the data relative to corporate governance, we used the information contained in the annual corporate governance reports published by the Spanish Securities Market Commission (CNMV). Also, financial information was taken from financial statements published in the CNMV. Finally, to construct the index for measuring environmental disclosure, we obtained information from the Global Reporting Initiative (GRI) web page and from the sustainability reports that firms voluntary disclose on their websites.

4.2 Variables

Based on prior literature (Moneva and Llena, 1996; Llena et al., 2007; Ballesteros et al., 2015), the dependent variable of environmental disclosure has been measured in two different ways. Firstly, a dichotomy variable (DISC_SUSTAI) takes the value 1 if the firm discloses the sustainability report, where environmental matters are reported and, 0 otherwise. Secondly, we have constructed, based on past research (Moneva and Llena, 1996; Llena et al., 2007; Ballesteros et al., 2015), an environmental disclosure index denoted by EN_Index. This index will range between 0 and 1. For each firm, the EN_Index takes into account six items: (1) information about a firm's objectives on environmental matters, (2) its environmental compromise, (3) its environmental policy, (4) its environmental management systems, (5) its environmental impact, and (6) improvements related with that environmental impact. Hence, if the company discloses all six items, it is given 1 point. If the disclosure is partial – i.e., the firm discloses between 1 and 5 items – it is given 0.5 points. If the firm´s information disclosure is null (0 items), it is given 0 points. Accordingly, a firm with 1 point has complete disclosure of environmental information, a firm with 0.5 points has partial disclosure of environmental information, and a firm with 0 points has no disclosure of environmental information. In this sense, our aim is to analyse the environmental information that listed firms have reported in their sustainability reports and how they are improving, or not, their environmental management systems and their environmental impact.

We consider the following independent variables. First, we take into account the percentage of institutional directors on boards (INST), which is calculated as the ratio between the number of institutional directors and the total number of directors. Second, we consider two different kinds of institutional directors. Accordingly, we take into account the variable SENSIT that represents the percentage of pressure-sensitive institutional directors, calculated as the ratio between the number of pressure-sensitive directors and the total number of board members. Furthermore, the variable RESIST represents the percentage of pressure-resistant institutional directors on boards and is calculated as the ratio between the number of pressure-resistant directors and the total number of board members.

Concerning control variables, we consider those factors that may influence our dependent variables. First, we consider the return on assets (ROA) to control for profitability. ROA is calculated as a ratio of earnings before interest and taxation (EBIT) to book assets. We predict a positive sign for this variable in line with Kim et al. (2012), who find a positive association between high financial resources and high levels of social practices. Second, leverage (LEV) is calculated as the ratio of the book value of debt to the total assets, and we expect a positive sign, according to Jensen and Meckling (1976), who report that leverage is positively associated with CSR reporting and, hence, environmental disclosure, since companies with high levels of leverage will be more likely to disclose voluntary information to reduce agency costs. Third, firm size (FIRMSIZE) is calculated as the logarithm of the total assets in thousands of euro, and we expect a positive relation between this variable and our dependent variables in line with Jenkins (2006) and Bies et al. (2007). Fourth, we control for board size (BDSIZE), which is calculated as the total number of board members. We expect a positive sign for this variable according to prior literature (Gallego et al., 2009) that shows a positive relationship between board size and CSR disclosure such as environmental information. Fifth, we consider the number of board meetings (BMEETING), and we expect a positive sign for this variable in line with Prado-Lorenzo and Garcia-Sanchez (2010). Sixth, we control for board independence (INDEP), which is calculated as the ratio between the number of independent directors sitting on boards and the total number of board members, predicting a positive sign between INDEP and our dependent variables. Authors such as Zahra and Stanton (1988) and Ibrahim and Angelidis (1995) report that independent directors, due to their characteristics, are concerned about their reputation and, consequently, are more interested in CSR disclosure, which includes environmental matters. Additionally, we control the sector by a dummy variable that takes the value 1 if the firm belongs to the analysed sector, with 0 otherwise. We classify the sectors according to categorisation used by the

supervisory body of stock exchanges (CNMV). In this regards, we consider the transport sector (TR); the cement, glass and construction materials sector (CGCM); the commerce and other services sector (COMER); the construction sector (CONST); the energy and water sector (EW); the insurance sector (FININ); the real estate sector (RE); the chemical industry sector (CHIN); the basic metal industries sector (BMI); the new technologies sector (NT); the other processing industries sector (OPI); the metal processing industries sector (MPI); and, finally, the other sectors (OTHERS – the reference category), which considers the remaining sectors that only have a few companies. According to previous research (Deegan and Gordon, 1996; Archel-Domenech, 2003; García-Ayuso and Larrinaga, 2003), some sectors are more likely to voluntarily report information, such as environmental data, than others, as their activities have a greater impact on society. Finally, we also control for firm and year fixed effects. Table 1 shows a summary of the variables used in this research.

[Insert Table 1 about here]

5. RESULTS

5.1 Descriptive statistics

The descriptive statistics for the variables are provided in Table 2. Our results show, on average, that the EN_Index is 0.364, which means that Spanish listed firms partially disclose on environmental matters. Concerning the variable DISC_SUSTAI, our results show that, on average, 43.97% of Spanish listed firms disclose sustainable reports containing environmental information. In other words, less than half of the Spanish listed firms disclose sustainable reports. In addition, on average, 31.12% of board members are institutional directors, with pressure-sensitive directors accounting for 6.99% and pressure-resistant directors accounting for 24.13%. Furthermore, ROA, on average, is 4.45%, and FIRMSIZE is 13.191 (log of total assets expressed in euro). Board size (BDSIZE) and board meetings (BDMEETING) are, on average, 10.67 and 9.56, respectively. Leverage, LEV, is 50.63%, and board independence, INDEP, is 31.84%, on average. Finally, the transport sector (TR) accounts for 3.33% of firms; cement, glass and construction materials sector (CGCM) 2.85%; commerce and other services sector (COMER) 10.88%; construction sector (CONST) 7.71%; energy and water sector (EW) 7.61%; insurance sector (FININ) 3.80%; real estate sector (RE) 11.94%; chemical industry sector (CHIN) 3.17%; basic metal industries sector (BMI) 4.22%; new technologies sector (NT) 6.55%; other processing industries sector (OPI) 23.78%; processing industries sector (MPI) 9.83%' and other sectors (OTHERS) 4.22%.

[Insert Table 2 about here]

5.2 Multivariate analysis

With the purpose of testing for multicollinearity, we calculate the correlation matrix. Our findings, unreported by the sake of the brevity, show that all pairs of coefficients are lower than 0.8 and, hence, it can be concluded that multicollinearity is not a concern.

In order to estimate the model where the dependent variable is DISC_SUSTAI, a dummy variable, we use a logistic regression because it is the most appropriate for handling the data. In contrast, we use a Tobit regression for the model where the dependent variable is the environmental index disclosure, EN_index, because this variable ranges between 0–1. This variable is also left- or right-censored and, that is why a Tobit regression is the most suitable regression in this case.

In Tables 3 and 4, we provide the findings for the regression models where the dependent variable is DISC_SUSTAI and EN_Index, respectively. In Model 1 in Table 3, and Model 4 in Table 4, we have analysed the effect of institutional directors on the DISC_SUSTAI and EN_Index variables, respectively. As predicted, the sign of the proportion of institutional directors is positive and statistically significant in both models; hence, the first hypothesis cannot be rejected.

Models 2, 3, 5 and 6 in Tables 3 and 4 make a distinction between pressure-sensitive institutional directors and pressure-resistant institutional directors. As can be seen in Model 2 in Table 3, and Model 5 in Table 4, pressure-sensitive institutional directors have a negative effect on a firm's decision to disclose sustainability reports and on the EN_Index, but they are not statistically significant. In contrast, pressure-resistant institutional directors have a positive impact on the disclosure of sustainability reports containing information on environmental issues and on the EN_Index, with this being statistically significant. According to these findings, the second hypothesis has to be rejected, whilst the third cannot be rejected.

[Insert Table 3 about here]

[Insert Table 4 about here]

These results reinforce the idea promoted by prior literature (Hill and Snell, 1988; Graves and Waddock, 1994; Johnson and Greening, 1999; Webb, 2004; Harjoto and Jo, 2011) suggesting that institutional directors could help to prevent reputational crisis and boycotts by reporting CSR information such as environmental issues, given their long-term orientation and their concern for their reputation. Additionally, this type of outside director is more likely to monitor managers not only out of concern for their reputation, but also because they may be worried about their capital or maybe they intend to "improve their external labor market" (Kaplan and Reishus, 1990). Moreover, Rupley et al. (2012) found that institutional investors

have influence over managers in terms of environmental disclosure, with the purpose of handling media coverage of an environmental crisis.

In addition, when we separate institutional directors into pressure-resistant institutional directors and pressure-sensitive institutional directors, our findings show that the former play a disciplinary and monitoring role over managers (Lopez-Iturriaga et al., 2015) due to their long-term orientation. In this sense, prior literature (Bushee, 1998; Ryan and Schneider, 2002) supports this hypothesis, since pressure-resistant institutional directors have long-term investment horizons and, therefore, will monitor management in pursuit of satisfying the demands of a firm's stakeholders. The disclosure of environmental information can be considered one of the mechanisms for satisfying these demands. Additionally, their concerns about their reputation will pressure managers into behaving according to the interests of the stakeholders of the company, thus supporting the disclosure of environmental information.

In contrast, pressure-sensitive institutional directors will prefer not to be in conflict with managers' decisions due to their business links with the company (David et al., 1998; Almazán et al., 2005) and their short-term perspective (Eng, 1999; Johnson Greening, 1999). Regarding their short-term horizon, authors such as Ryan and Schneider (2002) and Rupley et al. (2012) highlight the idea that this type of director is less concerned about a firm's reputation and will not encourage managers to disclose environmental information, since there is no benefit in the short term.

We have taken into account the possible endogeneity between INST, SENSIT and RESIST (the independent variables) and DISC_SUSTAI and EN_Index (dependent variables). The endogeneity has been handled by lagging the independent variables by one year. The main results, which, for the sake of brevity, are not provided here, remain unchanged and, therefore, the endogeneity is not a concern.

6. DISCUSSION AND CONCLUSIONS

This paper provides new evidence regarding the role played by institutional directors in firms' decisions to disclose environmental information and on the incentives that move them to report, or not report, these matters. Additionally, based on prior literature about institutional directors (Almazan et al., 2005; Borokhovich et al., 2006; Ferreira and Matos, 2008; Ramalingegowda and Yu, 2012), we also distinguish between banks and insurance firms (pressure-sensitive institutional directors), institutional investors who have two links with firms (investment and commercial), and mutual funds, investment funds, pension funds

and venture capital firms (pressure-resistant institutional directors), who only have the link of the investment.

Our findings report that institutional directors, as a whole, are positively associated with the firms' environmental disclosure, supporting the idea that these directors play a monitoring role, have a long-term perspective and are concerned about their reputation. Thus, the reputational concerns of institutional directors may reduce agency costs, since they will be interested in disciplining and supervising managers, guiding them toward decisions that strengthen their ties with their stakeholders and making business decisions that keep stakeholders informed on different matters, such as environmental ones. Additionally, institutional directors may pressure managers to disclose environmental information as a tactic to influence the opinion of society in order to improve a firm's reputation and, hence, their reputation. Moreover, since corporate governance affects a firm's legitimacy, institutional directors will try to preserve high moral standards, which directly affect environmental disclosure. In this sense, it is easy to think that firms with high moral standards will be more likely to disclose voluntary information, such as environmental matters, in order to promote an ethical attitude.

Pressure-sensitive and pressure-resistant institutional directors have also been examined. On one hand, our results find that pressure-sensitive institutional directors exert a negative influence on a firm's decision to disclose environmental information, but this effect is not statistically significant and, therefore, these institutional directors do not have an impact on a firm's decision to disclose environmental information, contrary to our expectations. This finding suggests that banks and insurance companies have a short-term horizon and will influence managers towards short-term decisions that increase their profit. For this reason, pressure-sensitive institutional directors have no intention to supervise managers and press them to disclose environmental information, as there is no profit associated with the reporting of information about environmental matters in the short-term. Thus, it is reasonable to think that these directors seek their own profit and, consequently, given the business ties they have with the firms where they sit on boards and the conflict of interests among the institutional investors represented by them, pressure-sensitive institutional directors will align with firms' managers. Finally, our results also support the theory that these directors do not have a strong stakeholder orientation and will thus be less proactive at the time of disclosing environmental issues.

In contrast, our results show that pressure-resistant institutional directors play a disciplinary and monitoring role over managers due to their long-term perspective. In this

sense, they will pressure managers to engage with business decisions that may improve their reputation (such as disclosure of environmental information) and the relationship among firms' stakeholders in order to reduce opportunistic behaviour by managers. These directors will try to preserve a firm's legitimacy, reduce agency costs and enhance a firm's relation with stakeholders in order to improve (or maintain) their reputation, which goes hand in hand with a firm's decisions such as environmental disclosure.

Our research has several important implications. First, our findings suggest that board composition is a very important matter to take into account if we aim to analyse environmental disclosure, since certain directors, such as institutional directors and pressure-resistant directors, will promote the voluntary disclosure of this information. Second, prior literature focused on the Spanish context by analysing the impact of board composition on financial variables, but little attention has been paid to the consequences of board composition on environmental disclosure. Our research fills this gap. Third, our results suggest that firms with more institutional directors are more likely to report environmental information and, therefore, regulatory bodies may use this evidence in order to promote institutional directors in public and non-public organisations. Fourth, our research sheds some light on the role played by board composition with regard to environmental disclosure, but more research is needed on this matter with the aim of extending the analysis to other types of firms, such as non-listed ones. Finally, ONGs and other firms or organisations that promote business ethics can use our findings to inform other companies about how to promote environmental disclosure using board composition.

This research is not free of limitations. First, based on prior literature, we have taken into account many variables that affect environmental disclosure, but there could be other factors that impact on our dependent variables. Finally, our sample covers 2004 to 2013 and, hence, our analysis is limited to those years.

Finally, our research has opened a new field for future research in the Spanish context, since this investigation could be applied to small and medium-sized enterprises (SMEs), non-listed firms and financial entities.

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Table 1. Variable description

Variables	Description	Expected Sign
Dependent		
DISC_SUSTAI	Dummy variable that takes the value 1 the firm discloses the sustainability report, where environmental matters are reported, and 0, otherwise	
EN_Index	Index that ranges between 0 and 1 and takes into account the items explained in section 4.2	
Independent		
INST	Ratio between the total number of institutional directors on board and the total number of directors on board	+
RESIST	Ratio between the total number of pressure-resistant institutional directors on board and the total number of directors on board	+
SENSIT	Ratio between the total number of pressure-sensitive institutional directors on board and the total number of directors on board	-
Control		
ROA	Ratio of earnings before interest and taxation (EBIT)/ Total book assets	+
LEV	Ratio of book value of debt over total assets	+
FIRMSIZE	Log of total assets	+
BDSIZE	Number of board members	+
BMEETING	Number of board meetings	+
INDEP	Ratio between the number of independent directors sitting on board and the number of board members	+
TR	Transport sector	
CGCM	Cement, glass and construction materials sector	

COMER	Commerce and other services sector
CONST	Construction sector
EW	Energy and water sector
FININ	Insurance sector
RE	Real estate sector
CHIN	Chemical industry sector
BMI	Basic metal industries sector
NT	New technologies sector
OPI	Other processing industries sector
MPI	Processing industries sector
OTHERS	Others sectors

Table 2
Main Descriptive Statistics

Panel A. Continuous variables

Variables	N	Mean	Std. Dev.	Perc. 25th	Perc. 50th	Perc. 75th
EN_Index	1092	0.364	0.446	0.000	0.000	1.000
INST	1092	31.107	23.917	13.000	27.888	50.000
SENSIT	1092	6.981	12.231	0.000	0.000	11.000
RESIST	1092	24.125	23.649	0.000	18.181	40.000
ROA	1092	4.450	12.771	-0.434	3.346	8.400
FIRMSIZE	1092	13.191	1.890	11.810	13.030	14.460
BDSIZE	1092	10.668	3.773	8.000	10.000	12.000
BMEETING	1092	9.557	3.70	7.000	10.000	12.000
LEV	1092	50.625	40.63	32.546	54.293	70.160
INDEP	1092	31.842	18.081	20.000	30.769	42.000

Panel B. Dummies variables

	1(%)	0(%)
DISC_SUSTAI	43.97%	56.03%
TR	3.33%	96.67%

CGCM	2.85%	97.15%
COMER	10.88%	89.12%
CONST	7.71%	92.29%
EW	7.61%	92.39%
FININ	3.80%	96.20%
RE	11.94%	88.06%
CHIN	3.17%	96.83%
BMI	4.22%	95.78%
NT	6.55%	93.45%
OPI	23.78%	76.22%
MPI	9.83%	90.17%
OTHERS	4.22%	95.78%

Table 3. Regression models where the dependent variable is DISC_SUSTAI

Variables	Expected Sign	Model 1 Estimated coefficient (p.value)	Model 2 Estimated coefficient (p.value)	Model 3 Estimated coefficient (p.value)
INST	+	0.001* (0.091)		
SENSIT	+		-0.005 (0.631)	
RESIST	-			0.014* (0.051)
ROA	+	-0.015 (0.212)	-0.013 (0.267)	-0.015 (0.205)
LEV	+	0.003 (0.063)*	0.001* (0.070)	0.002* (0.065)
FIRMSIZE	+	0.459*** (0.002)	0.454*** (0.003)	0.473*** (0.002)
BDSIZE	+	0.055 (0.243)	0.063 (0.169)	0.055 (0.239)
BMEETING	+	0.018 (0.677)	0.020 (0.642)	0.025 (0.559)
INDEP	+	0.043*** (0.000)	0.035*** (0.002)	0.042*** (0.000)
TR		1.533 (0.536)	1.900 (0.447)	1.816 (0.469)
CGCM		-1.774 (0.496)	-1.820 (0.484)	-1.769 (0.501)
COMER		-1.118 (0.582)	-1.048 (0.611)	-0.990 (0.635)
CONST		2.334 (0.262)	2.482 (0.234)	2.359 (0.263)
EW		0.969 (0.665)	1.147 (0.606)	1.102 (0.630)
FININ		-3.359 (0.125)	-3.21 (0.144)	-3.302 (0.140)
RE		-5.818*** (0.002)	-5.635*** (0.003)	-5.802*** (0.003)
CHIN		-0.608 (0.901)	-0.766 (0.836)	-0.492 (0.934)
BMI		-0.339 (0.893)	-0.258 (0.920)	-0.276 (0.915)
NT		-0.629 (0.781)	-0.529 (0.816)	-0.517 (0.824)
OPI		-1.315 (0.461)	-1.268 (0.477)	-1.228 (0.501)
MPI		-2.543	-2.551	-2.543

		(0.193)	(0.193)	(0.202)

Significant at *** for 99 percent confidence level, ** for 95 percent and * for 90 percent.

Table 4. Regression models where the dependent variable is EN_Index

Variables	Expected Sign	Model 4 Estimated coefficient (p.value)	Model 5 Estimated coefficient (p.value)	Model 6 Estimated coefficient (p.value)
INST	+	0.006* (0.063)		
SENSIT	+		-0.005 (0.357)	
RESIST	-			0.008** (0.015)
ROA	+	-0.006 (0.227)	-0.006 (0.231)	-0.005 (0.276)
LEV	+	0.001** (0.013)	0.001** (0.014)	0.001** (0.027)
FIRMSIZE	+	0.289*** (0.001)	0.294*** (0.001)	0.275*** (0.002)
BDSIZE	+	0.008 (0.683)	0.006 (0.771)	0.016 (0.443)
BMEETING	+	0.013 (0.529)	0.016 (0.433)	0.016 (0.449)
INDEP	+	0.017*** (0.002)	0.016*** (0.002)	0.012** (0.014)
TR		0.314 (0.838)	0.485 (0.755)	0.624 (0.700)
CGCM		-0.691 (0.668)	-0.684 (0.675)	-0.669 (0.682)
COMER		-0.766 (0.484)	-0.694 (0.532)	-0.691 (0.536)
CONST		1.112 (0.363)	1.121 (0.366)	1.240 (0.322)
EW		1.181 (0.341)	1.276 (0.311)	1.378 (0.274)
FININ		-1.946 (0.140)	-1.919 (0.149)	-1.825 (0.165)
RE		-3.617*** (0.000)	-3.577*** (0.001)	-3.467*** (0.001)
CHIN		-0.881 (0.566)	-0.837 (0.591)	-0.902 (0.561)
BMI		-0.897 (0.487)	-0.880 (0.498)	-0.794 (0.547)
NT		-0.511 (0.675)	-0.448 (0.717)	-0.420 (0.736)
OPI		-0.892 (0.304)	-0.844 (0.336)	-0.822 (0.347)
MPI		-2.254** (0.028)	-2.247** (0.030)	-2.242** (0.031)

Significant at *** for 99 percent confidence level, ** for 95 percent and * for 90 percent.