

How do the ownership structure and board of directors' features impact earnings management? The Spanish case^{*}

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Abstract

This paper examines how the ownership structure and board of directors' features determine the managerial opportunistic behavior exemplified in the management of accounting earnings. This study contributes to the literature by investigating the relationship of firm-level and country-level corporate governance systems on the earnings management in the Spanish corporate sector. Results reveal that the varying efficiency of the corporate governance systems is reflected in the way in which accounting discretion is performed. We found evidence that earnings management is reduced as the voting rights of the controlling shareholder increased and that there is an inverse U-shaped relationship between insiders' ownership and the earnings manipulation. Regarding the board characteristics, we observe that larger, independent boards, those with a larger proportion of female members, and those with an audit committee compounded by a greater proportion of outside independent directors oversee managers more efficiently, constraining their capacity to manage earnings. To the contrary, board duality increases

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the likelihood of opportunistic manipulation of financial reporting. We found that when the institutional environment improves in the Spanish context, the discretionary power of the corporate sector to overstate the financial statements is reduced. The findings prove the necessity of reinforcing the rules and regulations toward a more transparent disclosure of the financial statements.

KEYWORDS

board of directors, corporate governance, earnings management, legal system, ownership structure, Spanish market

JEL CLASSIFICATION

M14; M41

1 | INTRODUCTION

The goal of this paper is to examine how ownership structure, board of directors' features, and the regulatory system determine the managerial opportunistic behavior exemplified in the management of accounting earnings. Earnings management can be identified as the purposeful intervention in the reporting system to obtain private benefits (Schipper, 1989). The lack of efficient corporate governance mechanisms triggers this managerial opportunistic behavior (Claessens & Yurtoglu, 2013). Real-life examples of corporate scandals, which have considerably damaged the image and reputation of companies, are countless. Cases like Enron, Worldcom, Parmalat, and Lehman Brothers in the US context, as well as Bankia, Banco de Valencia, and Pescanova in the Spanish corporate sector, revealed the necessity of reinforcing the rules and regulations for a more transparent disclosure of the financial statements. In all these cases, financial markets could not anticipate the consequences of these scandals because the financial reporting was opportunistically manipulated.

According to Teoh, Welch, and Wong (1998a), within the scope of the generally accepted accounting principles (GAAP), earnings management can be committed by altering the accounting methods applied by corporations, or by changing the timing of asset acquisition and its disposition. Implicitly, this conception of earnings management involves the judgment that managers apply when reporting the company's performance to mislead stakeholders, or to influence contractual outcomes that depend on the earnings reported by the firm (Healy & Wahlen, 1999). Similarly, Beneish (1999) considers earnings manipulation as a situation when managers overstate the statements to report more favorable results. Either way, whether fraudulent or not, earnings management increases informational asymmetries between insiders and outsiders with the subsequent cost of shareholders' wealth deterioration (Abad, Lucas-Pérez, Minguez-Vera, & Yagüe, 2017). This argument is consistent with the hypothesis that firms with higher levels of corporate governance have lower information asymmetry and better earnings quality (Kanagaretnam, Lobo, & Whalen, 2007). In summary, we might suggest that all these definitions have as common denominator the opportunistic behavior of managers. Then, it is our goal to study such misbehavior in this paper.

Previous literature on earnings management has been focused on either internal or external governance systems. For instance, on the side of internal determinants of earnings management, Alves

(2012) and Gabrielsen, Gramlich, and Plenborg (2002) examine the relationship between corporate ownership structure and earnings management for Portuguese and Danish firms, respectively. Dechow et al. (1996) and more recently Gul, Hutchinson, and Lai (2013) consider internal governance structures as board characteristics in constraining earnings management and in enhancing transparency and accuracy of financial reports. Similarly, Warfield, Wild, and Wild (1995) analyze how managerial ownership level, as a firm-based governance system, affects both the informativeness and consequences of earnings manipulation. Although Davidson, Goodwin-Stewart, and Kent (2005) concentrated on board of directors' characteristics as firm's internal governance structures in constraining earnings management; López and Saona (2005) focused on debt and ownership dynamics as corporate systems in limiting the discretionary behavior of managers of Spanish firms. On the other hand, there are papers focused only on external country-level determinants of earnings management. For instance, Han, Kang, Salter, and Yoo (2008) study whether the degree to which managers exercise earnings discretion relates to their culture as a proxy of their value system, as well as the institutional features. Similarly, Hope (2003) and Ball, Kothari, and Robin (2000) use estimates based on models of common and code law countries' characteristics to determine earnings management. Leuz, Nanda, and Wysocki (2003) provide evidence on how legal protection of shareholders impacts the earnings' quality. Ho, Liao, and Taylor (2015), Pelucio-Grecco, Geron, Begas, and Cavalcante (2014), and Kabir, Laswad, and Islam (2010) analyze how earnings management can be restricted by changes in accounting regulations for samples of firms from Spain, Brazil, and New Zealand, respectively.

Thus, most of the empirical literature is focused either on firm-level variables (ownership structure and the characteristics of the board of directors) or on country-level variables (legal and institutional environment) as determinants of managerial capacity to manipulate the financial reports. However, we see a gap of empirical studies on earnings management focused on an all-embracing, firm- and country-level variables approach (Saona & Muro, 2018). Consequently, through this work we intend to reduce this gap in the empirical literature. In doing so, our research goal is to analyze, from a corporate governance approach, how the ownership structure features, board characteristics, and the legal and institutional environment impact on earnings management in a sample of listed representative Spanish firms. To the best of our knowledge, this is perhaps the first work in studying the relationship of firm-level and country-level corporate governance systems on the earnings management for a sample of firms from Spain.

We found evidence that listed firms in Spain opportunistically manipulate their financial reports and that corporate governance systems determine this managerial opportunistic behavior materialized in the overstatement of financial reports. The discretionary capacity of executives to manage the earnings is reduced as the voting rights of the controlling shareholder increases. Concerning insider ownership, our results show that there is an inverse U-shaped relationship with the earnings manipulation. Regarding the characteristics of the board of directors, we observe that larger, independent boards, as well as those in which the audit committee independence is greater, oversee managers more efficiently, constraining their capacity to manage earnings. To the contrary, board duality increases the likelihood of opportunistic manipulation of financial reporting. Additionally, board gender diversity is suggested as a new determinant of earnings management in the most recent literature (Kyaw, Olugbode, & Petracchi, 2015; McGuinness, Lam, & Vieito, 2015). Our findings show that a larger proportion of female board members improves the quality of board discussion and increases the ability to provide a better oversight of a firm's disclosures and financial reporting. We found in our research that when the institutional environment improves in the Spanish context, the discretionary power of the corporate sector to overstate the financial statements is reduced.

Our paper contributes to the literature by providing in depth research on determinants of earnings management that have not been included in previous research for the Spanish market. Specifically, we

have developed an all-embracing model that incorporates governance variables at company and country levels, such as the ownership structure features, board characteristics, and Worldwide Governance Indicator (Kaufmann, Kraay, & Mastruzzi, 2011). Particularly, the assessment of boardroom gender diversity in the Spanish context and its influence on the quality of financial reporting remains an underexplored field, and this paper intends to close the gap in this respect. Additionally, this paper contributes to the literature by applying a methodology that controls the econometric problems of unobservable heterogeneity and endogeneity, which have not been properly considered in the previous literature. Finally, we formulate some policy recommendations from this analysis.

The paper proceeds as follows. In addition to this introductory section, the next section summarizes the literature review and develops the research hypothesis. Section 3 describes the methodology used in the empirical analysis. Section 4 discusses the empirical results, and finally, in Section 5, we underline the major conclusions.

2 | LITERATURE REVIEW AND HYPOTHESES

2.1 | Corporate governance and earnings management

Earnings management is a direct consequence of agency problems. The agency approach is the theoretical body which studies the conflict of interests caused by the different incentives between the contractual parties (Jensen, 1994; Jensen & Meckling, 1976). This conflict of interests demands mechanisms which encourage managers to behave in the best interest of shareholders instead of the managers' own interests. This set of mechanisms is named corporate governance systems.

Broadly defined, corporate governance corresponds to the set of rules in capital markets governing the equity investments in firms (Claessens & Yurtoglu, 2013; Vander Bauwhede, 2009). Similarly, Zingales's (1998) approach on corporate governance defines it as a set of contracts that determine the rights on the cash flows generated by the firm. In the same line, Kumari and Pattanayak (2014) define corporate governance from a more classic point of view as the set of systems that ensure a company is properly managed in the best interest of stakeholders. Consequently, managerial opportunistic behavior is contingent on the efficiency of such governance systems. Thus, the better the governance quality, the lower the managerial capacity to opportunistically manage the earnings.

As corporate governance systems are, by default, imperfect, managers have incentives to make discretionary decisions by following their own interests instead of following the wealth maximization of their shareholders. One of the mechanisms used to convey information to potential investors and capital markets is the financial reporting. Therefore, a plausible action of managers to achieve their own interests is the choice of techniques to manage the earnings (Jensen, 2003; Smith, 1976). According to Shen and Chih (2007), earnings management is the alteration of a firms' reported economic information and performance to either mislead stakeholders in order to reduce outsider interference or protect insider private control benefits. The techniques to manage the earnings might take the form of changes in the accounting methods (Moses, 1987; Yoon, Miller, & Jiraporn, 2006) such as modifications in the inventory valuation system or in accounting methods recording and recognizing extraordinary income and expenses (Beattie et al., 1994); in the smoothing of earnings in real activities such as in import relief investigations (Jones, 1991) or in seasoned equity offerings (Cohen & Zarowin, 2010); in the choice of reserves or provisions for loan losses, which are always subjective (Tirole, 2006); or in the accruals (Dechow, 1994; Gabrielsen et al., 2002; García-Teruel, Martínez-Solano, & Sánchez-Ballesta, 2009), among many others. Out of all these mechanisms, perhaps the one that has raised more attention in the empirical literature is the accounting accruals (Dechow, 1994; Dechow, Sloan, &

Sweeney, 1995; Jones, 1991; Jones & Sharma, 2001). The main goal of accounting accruals is to improve the quality of the information reported in the financial statements, and to avoid the mismatching between cash flows and the flow of income and expenses. Nevertheless, there might be a discretionary use of the managerial capacity to manipulate or redirect the information reported in the financial statements (Barth, Cram, & Nelson, 2001), which is called discretionary accruals and is perhaps the most common way to manage earnings.

Since the origin of discretionary accruals is based on, on the one hand, the ability and incentives of managers to manipulate the financial statements, and, on the other, the efficiency (or lack of it) of the corporate governance mechanisms, the goal of this paper is to study how the variables associated with corporate governance systems impact the discretionary use of accruals to manage the earnings.

2.2 | Corporate ownership features and earnings management

Theoretical and empirical literature demonstrates that ownership dynamics entail alternative incentives to monitor a firm's management and to align the interests between the principal and the agents (Goh, Lee, & Lee, 2013; Jensen & Meckling, 1976; Morck, Shleifer, & Vishny, 1988; Shleifer & Vishny, 1986). Jensen and Meckling (1976) theorize that managers may act according to their own self-interest when the firm's control and ownership are diluted, which eventually might lead to more active earnings management to increase earnings based compensation, a relaxation of contractual constraints, or avoidance of debt covenants (Healy, 1985; Holthausen, Larcker, & Sloan, 1995).

Lefort (2005), Kim and Yi (2006), and Price, Román, and Rountree (2011) highlight the relevance of ownership concentration as a governance device in the context of weak protection of investors' rights and its impact on the quality of financial results. Based on these arguments, opportunistic earnings manipulation should be lower before highly concentrated ownership structures. In an empirical study, Goh et al. (2013) find evidence that suggests that the greater the ownership of majority shareholders, the more they play a positive role in mitigating managerial opportunistic behavior such as the real earnings management.

Spain is classified within the group of French civil-law regime, characterized by weak investor protection and almost no litigation risk for directors (La Porta, Lopez-De-Silanes, & Shleifer, 1999; La Porta, Lopez-De-Silanes, Shleifer, & Vishny, 2000). Differing from the United States and the UK, in Spain the ownership structure is highly concentrated, where family and institutional stockholders have representation in the board of directors, and commonly control managers as traditional owners do (García & Gill-de-Albornoz, 2007). The country is known for having highly concentrated ownership structures. For instance, González Rodríguez and Menéndez Requejo (1993) find that 38.2% of their sample has a shareholder with a percentage higher than 50% and that 36.2% of the ownership is in the hands of non-financial institutions. Similar conclusions have been recently reported by Hernández-Cánovas, Mínguez-Vera, and Sánchez-Vidal (2016) for Spanish firms. Thus, we suggest the following hypotheses on the corporate ownership structure:

H1 A negative relationship is expected between corporate ownership concentration and earnings management.

Concerning the insider ownership, Jensen and Meckling (1976) propose the convergence of interest hypothesis, whereby interests between managers and outside shareholders converge when insider shareholdings increase. In the same vein, Warfield et al. (1995) identified that highly invested managers are more likely to make accounting choices that reflect firm economics rather

than personal motives. With a more refined approach, Morck et al. (1988) and Warfield et al. (1995) suggest that at low levels of closely held shares, there is an alignment of interests between managers and shareholders, and consequently, higher constraints to manage earnings opportunistically. Nevertheless, an entrenchment effect may be observed in the highest levels of insider ownership (Qiang & Warfield, 2005). In this situation, managers can use their power to manipulate earnings and channel certain wealth from shareholders in their own interest. Alves (2012) suggests that a non-linear relationship between earnings management and corporate ownership is plausible, where at low levels of insider (managerial) ownership, alignment of interests exists, and the likelihood of earnings management is lower. However, at high levels of insider ownership managers would be insulated from shareholder discipline and the likelihood of opportunistically managing the accounting earnings would increase (Huang, Wang, & Zhou, 2013). Therefore, our hypothesis on insider ownership states that:

H2 A U-shaped relationship is expected between insider ownership and earnings management.

2.3 | Board of directors and earnings management

According to Huang, Chan, Chang, and Wong (2012), the major role of the board of directors is to protect stakeholders' interest by monitoring the management. This role might be translated in constraining the practice of earnings management (Dechow, 1996; Kumari & Pattanayak, 2014; Park & Shin, 2004; Sáenz & García-Meca, 2014). Following Kumari and Pattanayak (2014) we identify several areas of interest related to board composition and earnings management practice such as board independence, board size, duality role, board gender diversity, and the audit committee independence that are discussed below.

Boardroom composition is one of the most important attributes of corporate governance. To enhance the effectiveness of the board, policy directives usually require most outside directors in the board. Policy directives adopted in many jurisdictions—including the UK Corporate Governance Code, namely the Financial Reporting Council (2014); the Corporate Governance Guidelines in Canada supported by the Canadian Securities Administrators (2015); or the Sarbanes–Oxley Act (2002) in the United States and the Good Governance Code of Listed Companies (CNMV, 2015) in Spain—presume that the participation of external, independent board members can make a positive contribution to the board's monitoring duties (Beasley, 1996; Hashim & Devi, 2008; Patelli & Prencipe, 2007; Rahman & Ali, 2006). Previous empirical literature evidences that a higher proportion of external, independent directors results in reducing the chances of managing the earnings, which indicates a better quality of the financial information for making decisions (Bradbury, Mak, & Tan, 2006; Davidson et al., 2005; Jaggi, Leung, & Gul, 2009; Klein, 2002; Peasnell, Pope, & Young, 2005; Xie, Davidson Iii, & DaDalt, 2003).

Agency approach suggests that independent directors are an effective governance system that reduces the agency costs that arise from the separation of ownership and control. Empirically speaking, Monks and Minow (2011) show that independent directors behave as uninterested outsiders and therefore are more likely to follow the shareholders' wealth maximization rule. For a sample of Spanish listed companies, Pucheta-Martínez and García-Meca (2014) show that independent directors on the board exert much more influence than other board members regarding the demand for high quality financial information. Therefore, in Spain, independent directors are expected to monitor the financial information elaboration process by constraining executives' attempts to manipulate accounting when they have the proper incentives. Thus, we suggest the following hypothesis:

H3 The proportion of independent directors on the board is negatively related to accounting manipulation.

The findings concerning the impact of board size on earnings managements are not conclusive. For instance, there are several studies suggesting the negative relationship between board size and earnings management practices (Byard, Li, & Yu, 2011; Chiu, Teoh, & Tian, 2013; Cunha & Piccoli, 2017; García-Meca & Sánchez-Ballesta, 2009; Sánchez-Ballesta & García-Meca, 2007; Sarkar, Sarkar, & Sen, 2008; Shah, Butt, & Hasan, 2009). According to these findings, a larger board may be more likely to have professional independent directors with experience in the corporate sector. Consequently, a larger board might be better at constraining earnings management. On the other side, a small board of directors may make decisions more dynamically, efficiently, and in a timely manner, constraining the managerial opportunistic behavior and reducing the earnings management. Bureaucracy costs are higher in large boards of directors as well as coordination problems that could bring difficulties with regard to using knowledge and skills effectively (Forbes & Milliken, 1999). Consequently, a smaller board size might be seen as more functional and effective as a monitoring system and in providing better financial reporting oversight (Karamanou & Vafeas, 2005; Lipton & Lorsch, 1992; Xie et al., 2003; Yermack, 1996; Zgarni, Halioui, & Zehri, 2014). Moreover, Jensen (1993) advocates for small boards on behalf of board effectiveness. Ribeiro and Colauto (2016) conclude that board size forms a motivation for managers to increase real earnings management. Thus, we hypothesize that:

H4 The size of the board of directors may impact positively or negatively in constraining earnings management.

The CEO duality is another area of concern which influences the composition and the efficiency of the board as a monitoring system. CEO duality takes place when one person occupies both board chair and CEO positions. In this scenario, where CEO is at the same time chairman of the board, there is no independency in the control and, consequently, the monitoring system is useless.

According to Finkelstein and D'Aveni (1994), organization theory states that CEO duality establishes strong and effective leadership, whereas agency theory states that duality facilitates CEO entrenchment by reducing board monitoring effectiveness. More specifically, they found that vigilant boards prefer non-duality in the specific case of either informal CEO power or if firm performance is high. According to this theory, Dechow et al. (1996) found that earnings manipulators are more likely to have CEO duality.

Even though many authors do not find a significant positive correlation between these two variables (Davidson et al., 2005; García-Meca & Sánchez-Ballesta, 2009; Rahman & Ali, 2006), recent research has changed this trend. Thus, Zouari, Lakhari, and Nekhili (2015) found that CEO duality significantly affects the earnings management process in France. Gulzar and Wang (2011) suggest that separating the role of CEO and Chairman helps in reducing earnings management among the listed firms of the Shanghai and Shenzhen stock exchanges. Iraya, Mwangi, and Muchoki (2015) concluded that an increase in CEO duality in the companies listed on the Nairobi securities exchange led to a further increase in earnings management. Using data from a sample of Australian public companies, Bliss (2011) found that CEO duality constrains board independence, and therefore derives poorer corporate governance. His analysis reveals that firms with CEO duality have lower levels of compliance with mandatory disclosures of employee stock options, increasing agency problems and therefore reducing transparency. His analysis is in line with Carcello, Hermanson, Neal, and Riley (2002) that found that when CEO duality exists, the effectiveness of directors on boards to demand higher quality audits might be questioned. Thereby, we hypothesize that:

H5 CEOs with dual roles are more likely to engage in more active earnings management activities.

Gender diversity has become increasingly relevant over the last few years in the business world and particularly in the academic world. Equal participation of women and men in decision-making positions is a matter of justice, respect for fundamental rights, and good governance, according to the 2017 report on equality between women and men in the European Union.

Several improvements have been put in place via regulations to increase board gender diversity in the Spanish context. In this respect, Reguera-Alvarado, Fuentes, and Laffarga (2017) state that Spain was the second country in the world to legally require gender quotas in boardrooms and yet, historically, is characterized by a minimal female presence in the workforce. Evidence of this is the 3/2007 Equality Law, which gave listed firms eight years—until 2015—to achieve representation in their boards of a minimum of 40% and a maximum of 60% of each gender, but the absence of sanctions for noncompliant companies weakened the effectiveness of the statutory policy. In this line, for Spanish listed companies, García-Izquierdo, Fernández-Méndez, and Arrondo-García (2018) support the presence of female directors not only as a social measure or tokenism, but also as a contribution to good governance practice. For a sample of banks from nine different countries, including Spain, similar findings are observed by García-Sánchez, Martínez-Ferrero, and García-Meca (2017), who state that the monitoring roles of both female and financial experts exert a positive effect on accounting conservatism and earnings quality in financial institutions.

According to Gul, Srinidhi, and Ng (2011), board gender diversity could improve the quality of board discussions and increases the ability of the board to provide better oversight into a firm's disclosures and financial reporting. Some other studies have been focused on the impact of female representativeness in the board of directors and its impact on a firm's performance (Francoeur, Labelle, & Sinclair-Desgagné, 2007) and earnings management (Gavious, Segev, & Yosef, 2012; Gull, Nekhili, Nagati, & Chtioui, 2017; Kyaw et al., 2015). Since female board members are more likely to abide by ethical values and sound moral behavior, the mitigation of earnings management is more pronounced when the proportion of female members increases (Barua, Davidson, Rama, & Thiruvadi, 2010; Ittonen, Vähämaa, & Vähämaa, 2013). Similarly, literature suggests that female directors are more risk averse than male directors (Rau, 2014; Watson & McNaughton, 2007), which enhances the quality of the reported financial information (Bosquet, Goeij, & Smedts, 2014). With a similar scope, Abad et al. (2017) find for the Spanish corporate sector that gender diverse boards have beneficial effects on the level of information asymmetries in the stock market.

From a business ethics' perspective, research finds that female managers are at a significantly higher average level of moral development than male managers (Bernardi & Arnold, 1997). In the same line, Ruegger and King (1992) found that gender is a significant factor in the determination of ethical conduct and that females are more ethical than males in their perception of business ethical situations. Betz, O'Connell, and Shepard (1989) found that men are more than two times as likely as women to engage in actions regarded as unethical. Thus, we hypothesize that:

H6 The larger the proportion of female board members in the board of directors, the lower the earnings management capacity of executives.

Given that the main scope of this research deals with the impact of corporate governance systems on the opportunistic manipulation of accounting earnings, we cannot dissociate the major role played by the audit committee in favoring higher quality and transparency of financial statements.

Davidson, Pilger, and Szakmary (1998) suggest that the role of inside and outside or independent directors differs across the various board committees. For instance, insiders may best use their company knowledge on committees that focus on firm-specific issues such as in the investment and finance committees, while outside directors may be more important on committees that handle agency issues such as the audit committees. Consequently, it is derived from these arguments that the proportion of outside, independent directors in the audit committee is directly related to the quality of the accounting reports. Magee and Tseng (1990) define audit independence as an auditor's reporting decisions being consistent with his or her beliefs as to whether the reporting decision may be regarded as an audit failure. Such independence of the audit committee does not compromise the beliefs of the auditors, and consequently, the reported financial information is less subject to private interests that deprive shareholders of wealth. Based on these arguments, audit committees are more effective monitors as the proportion of independent outside directors increases.

Empirically speaking, Badolato, Donelson, and Ege (2014) find a negative relationship between the audit committee financial expertise and status and earnings management. Klein (2002), for the specific context of publicly traded US firms, finds that reductions in audit committee independence are linked to increases in abnormal accruals, while Magee and Tseng (1990) demonstrate that there is a direct relationship between the auditor independence and the quality of the financial reports. In the same line, Pucheta-Martínez and García-Meca (2014) examine how the presence of representatives of institutional investors as directors on boards or on audit committees enhances financial reporting quality in the Spanish corporate sector, reducing the probability that the firm receives qualified audit reports. And lastly, Bédard, Chtourou, and Courteau (2004) find that for US companies, the presence of at least one member with financial expertise in the audit committee is associated with a lower likelihood of aggressive earnings management, as is the level of governance expertise in the committee.

Spanish listed companies are required to use International Financial Reporting Standards (IFRS), which relies on a principles-based approach. Carmona and Trombetta (2008) suggest that this approach requires knowledgeable and expert accountants and auditors who have to deal openly and flexibly. This has required substantial changes in the training of accountants and auditors in Spain, where according to the local jurisdiction the accounting and auditing professions were perceived as “activities” with lack of professional status (Carrera, Carmona, & Gutiérrez, 2008). Hence, those institutional changes in Spain have led to more sophisticated and qualified independent directors in the audit committees of listed companies that curb aggressive earnings management. As observed, the literature is conclusive in regard to audit committee independence, and therefore, we hypothesize that:

- H7** More independent audit committees will drive to less earnings manipulation in Spanish listed firms.

3 | METHODOLOGY AND VARIABLES MEASUREMENT

3.1 | Model specification

This section describes the source of information, the methodology and model specification used in the econometric analysis. Our sample is comprised of 120 non-financial Spanish listed firms from the years 2006 to 2014, with a total of 877 observations, which allows us to form an unbalanced panel with an average of 7.3 continuous year-observations per company. In panel data analysis, it is a *sine*

qua non condition to have at least a minimum of 4 continuous observations per individual to obtain efficient outputs (Baltagi, 2013). The sample firms are representative of the Spanish corporate sector since we include 77% of the non-financial listed firms during the period of in the analysis, distributed in the following industrial sectors: consumer goods and services (38.6%), basic materials, industry and construction (29.7%), petrol and energy (9.7%), technology and telecommunications (6.9%), and other industrial sectors (15.1%).

Financial firms were excluded from the analysis because their financial reporting regarding the record and computation of accrual-based earnings management—loan loss provisions—is significantly different from that of non-financial firms. We also excluded firms with negative common equity, corresponding to those technically in bankruptcy, basically because their pattern of discretionary accruals is likely to differ substantially from the one followed by companies under normal operations. We also excluded firms with missing values for the construction of relevant variables. The financial statements and corporate ownership structure information was obtained from Thomson Reuters EIKON, while the information concerning board features was manually collected from the Annual Report of Corporate Governance published by the Spanish Stock Exchange Commission.

We are interested in assessing whether ownership structure dynamics and board features predict a change in managers' discretionary power through abnormal accruals. Our data are a combination of time series and cross-sectional data, allowing the composite of panel data. The heterogeneity problem and the endogeneity problem are two major econometric limitations in panel structures (Baltagi, 2013). The first problem, on the one hand, refers to the firm-specific, time-invariant characteristics such as the firm's business strategy, the organizational culture, internal policies, and managerial style. Since such characteristics are unobservable, they become part of the random component in the estimates. The application of the econometric technique allows us to control for these firm fixed effects. On the other hand, the endogeneity problem takes place when abnormal accruals might drive an impact on governance measures (López & Saona, 2007), and consequently, the direction of the causality is not clearly established (Arellano, 2003; Baltagi, 2013). Given the possible problem of endogeneity in the empirical analysis with the variables of ownership structure and board characteristics, we address this problem by estimating parameters using the enhanced system estimator version (SE) of the generalized method of moments (GMM) proposed by Blundell and Bond (1998) and Bond (2002). One important feature of the GMM method is that it controls for endogeneity of all firm-level variables by introducing lagged right-hand-side variables as instruments. Specifically, we introduce the ownership structure features as well as the board characteristics, lagged from $t - 1$ to $t - 3$, as instruments in the estimations.

Several econometric tests are used to ensure the quality of the estimations. For instance, second-order, AR(2), serial correlation test is used. The validity of the instruments is tested with the Hansen contrast of over-identifying restrictions. We also report an F test of the joint significance of the estimated coefficients. A test of multicollinearity is estimated using the variance inflation factor (VIF). A Fisher-type (Choi, 2001) contrast is used to test the stationarity of the variables in the model. In this case, the null hypothesis is that all the panels contain a unit root. This is a suitable test because it does not require strongly balanced panels as described below. The appropriate Lind–Mehlum test (Lind & Mehlum, 2010) is used to check the significance of the non-monotonic relationships suggested in our second research hypothesis when the insider ownership variable is used. For those estimations that required the construction of interacted variables, the linear restriction test was employed to assess if the addition of related coefficients was statistically significant. To avoid biases in the estimations, the variables were winsorized at the 1% level in both tails.

Since our goal is to measure the impact of firm-level variables and governance systems on abnormal accruals, and not necessarily the direction of such manipulation, we use the absolute value of discretionary accruals ($ABSDA_{it}$) as our measure of the dependent variables, as shown later.

3.2 | Variables measurement

3.2.1 | Discretionary accruals

This part defines quantitatively the earnings management. Since there is not a perfect way to measure discretionary earnings management, we will follow several alternative methods widely used in the literature.

We follow García and Gill-de-Albornoz (2007) to compute the first model of discretionary accruals which employs the working capital accruals WCA_{it} version of the Jones (1991) model instead of the total accruals TA_{it} , as expressed in Equation (1). WCS_{it} is computed as:

$$\frac{WCA_{it}}{A_{it-1}} = \frac{\beta_0}{A_{it-1}} + \beta_1 \frac{\Delta Rev_{it}}{A_{it-1}} + \varepsilon_{it} \quad (1)$$

Thus, non-discretionary accruals (NDA_{it}) for i firm in t period correspond to the prediction from the OLS estimation. And the discretionary accruals (DA_{it}) are estimated as the residuals from the regression model (1). Subsequently, the discretionary accruals according to this model would be:

$$DA_{it}^{\text{model1}} = \frac{WCA_{it}}{A_{it-1}} - \frac{\hat{\beta}_0}{A_{it-1}} - \hat{\beta}_1 \frac{\Delta Rev_{it}}{A_{it-1}} \quad (2)$$

Our next model for estimating discretionary accruals is based on the changes to the standard Jones model proposed by Kasznik (1999), who suggested including an additional explanatory variable in the model measured as the change in cash flow from operations (ΔCFO_{it}). Hence, for robustness checks we include in the Jones cash flow modified model of Kasznik (1999) the working capital accruals versions as follows:

$$\frac{WCA_{it}}{A_{it-1}} = \frac{\beta_0}{A_{it-1}} + \beta_1 \frac{\Delta Rev_{it}}{A_{it-1}} + \beta_2 \frac{\Delta CFO_{it}}{A_{it-1}} + \varepsilon_{it} \quad (3)$$

Subsequently, the discretionary accruals in our second model take the following form:

$$DA_{it}^{\text{model2}} = \frac{WCA_{it}}{A_{it-1}} - \frac{\hat{\beta}_0}{A_{it-1}} - \hat{\beta}_1 \frac{\Delta Rev_{it}}{A_{it-1}} - \hat{\beta}_2 \frac{\Delta CFO_{it}}{A_{it-1}} \quad (4)$$

Finally, we use the model adapted by Dechow et al. (1995), Teoh, Welch, and Wong (1998b), and Park and Shin (2004) in order to estimate the discretionary accruals. This model computes non-discretionary accruals by regressing the current accruals on the change in revenues in an OLS regression as such:

$$\frac{CA_{it}}{A_{it-1}} = \beta_0 \frac{1}{A_{it-1}} + \beta_1 \frac{\Delta Rev_{it}}{A_{it-1}} + \varepsilon_{it} \quad (5)$$

where CA_{it} is current accruals measured as the change in non-cash current assets minus the change in non-debt current liabilities. Then, following Dechow et al. (1995) we estimate the firm's non-discretionary current accruals (NDCA_{it}) as follows:

$$NDCA_{it} = \hat{\beta}_0 \frac{1}{A_{it-1}} + \hat{\beta}_1 \frac{\Delta Rev_{it} - \Delta AR_{it}}{A_{it-1}} \quad (6)$$

where the estimated beta coefficients are those from regression parameters obtained from Equation (5) and ΔAR_{it} is the change in accounts receivable. So finally, the discretionary accruals correspond to the remaining portion of current accruals computed as:

$$DA_{it}^{model3} = \frac{CA_{it}}{A_{it-1}} - NDCA_{it} \quad (7)$$

3.2.2 | Explanatory variables

The explanatory variables of discretionary accruals are in accordance with the theoretical framework and research hypotheses described above. Among the corporate ownership variables, we use the ownership concentration for which two alternative measures were created. The first one is the percentage of outstanding shares owned by the controlling shareholder (OWN1_{it}) and the second one corresponds to the percentage of shares held by the three major shareholders (OWN123_{it}). Another feature of corporate ownership used in the empirical analysis corresponds to the closely held shares which are the outstanding shares in the portfolio of insiders (INSOWN1_{it}). Since OWN1_{it} and INSOWN1_{it} measures are skewed as a consequence of the relatively high concentration of ownership in European civil-law countries, and particularly in Spain (de Miguel, Pindado, & Torre, 2004; Pindado & De La Torre, 2009), we followed Demsetz and Villalonga's

(2001) approach by transforming both variables as $\text{Log} \left(\frac{OWN1_{it}}{1-OWN1_{it}} \right)$ and $\text{Log} \left(\frac{INSOWN1_{it}}{1-INSOWN1_{it}} \right)$, respec-

tively, to reduce their skewedness and increase the normality in their distributions. Additionally, dummy variables were created to identify the nature of the major shareholder as institutional investor (INSTINV_{it}), family-owned firm (FAMFIRM_{it}), or the government (GOVFIMR_{it}). Concerning the features of the board of directors, we included in the estimations the board independence (BINDEP_{it}) which corresponds to the proportion of independent directors. Board size (BSIZE_{it}) is measured by the total number of directors that comprise the board of directors. Board duality role (BDUAL_{it}) is a variable that measures the percentage of board members that are at the same time executives. In this respect, in order to assess the interacted impact of board duality role on corporate ownership features, a dummy variable was included that measures separation of powers between the board chairman and chief executive (BDUAL1_{it}). By construction, this variable takes value 1 if separation of power exists and 0 otherwise. We also included a variable which measures the proportion of female directors sitting in the board of directors (BGENDER_{it}) to shed light on the role of female directors in disciplining managers; and the audit committee (BAUDIT_{it}), corresponding to the proportion of members in the audit committee that are independent directors.

Control variables widely utilized in the previous literature were used to avoid misspecification problems, and because the proxy variables used for earnings management might include measurement errors that are correlated with these control variables (Cohen & Zarowin, 2010; Ho

et al., 2015). For instance, we controlled for the firm size ($SIZE_{it}$), computed as the logarithmic transformation of total assets. This is the typical transformation of variables with large positive values. There is no clear clue about the expected sign between the company size and the proxies of earnings management. Larger firms more closely followed by analysts and regulatory entities and one might expect less earnings management. However, larger firms also are, by their very nature, more complex organizational structures with a vast number of economic transactions subject to be managed opportunistically. Consequently, the expected relationship between the company size and the managerial incentive to engage in earnings management is not clear. We also included the leverage ratio (LEV_{it}) calculated as the addition of short- and long-term debt over total common equity. The literature supports a positive and a negative relationship between the level of debt and the discretionary accruals. On the one hand, as argued by Jensen and Meckling (1976), high levels of debt reduce the firm's free cash flow that otherwise might be used opportunistically by managers in suboptimal decisions such as private rent seeking, exerting a negative impact on discretionary accruals. However, on the other hand, managers of leveraged companies might be prone to engage in managing earnings in order to fulfill the debt covenant requirements (DeAngelo, DeAngelo, & Wruck, 2002). Consequently, the relationship between the leverage position and discretionary accruals is an empirical issue. Profitability of assets (ROA_{it}) was included as a performance measure computed as net income over total assets. Additionally, we included a variable which measures the default risk (Z_{it}) based on the Altman (1968) Z-score.¹ Thus, a poor financial position could increase the agency costs and encourage management to opportunistically manipulate the accounting numbers. Finally, industry sector and temporal dummy variables were created to fit the models.

Thus, the general form of the model specification is:

$$ABSDA_{it} = \beta_0 + \sum_{k=1}^K \delta_k CG_{it} + \sum_{j=1}^J \gamma_j CV_{it} + \eta_i + \mu_t + \varepsilon_{it} \quad (8)$$

where CG_{it} is a vector comprising the set of $K = 11$ corporate governance variables which explain the extent of the discretionary accruals (e.g., $OWN1_{it}$, $OWN123_{it}$, $INSOWN_{it}$, $INSTINV_{it}$, $FAMFIRM_{it}$, $GOVFIMR_{it}$, $BINDEP_{it}$, $BFSIZE_{it}$, $BDUAL_{it}$, $BGENDER_{it}$ and $BAUDIT_{it}$); CV_{it} is a vector which includes $J = 6$ control variables (e.g., $SIZE_{it}$, LEV_{it} , ROA_{it} , Z_{it} , and control dummy variables for the industry sector and time); η_i is the firm-specific effect; μ_t is the time effect; and ε_{it} is the error term.

TABLE 1 Descriptive statistics of discretionary accruals

Variable	Obs	Mean	SD	Min	Max	p-value
ABSDA1	877	0.0098	0.0114	0.0001	0.0654	.0000
ABSDA2	877	0.0201	0.0232	0.0000	0.1709	.0000
ABSDA3	867	0.0534	0.0743	0.0000	0.5727	.0000

Note: This table tabulates the descriptive statistics of the alternative measures of discretionary accruals used in the empirical analysis. This table is also used to test the null hypothesis that mean values are equal to zero. *p*-values in the last column of this table show that the mean values of all the alternative measures of discretionary accruals are different from zero, which is used as evidence that listed firms in Spain manipulate opportunistically their financial reports.

4 | RESULTS

4.1 | Univariate analysis

Table 1 tabulates the descriptive statistics of the alternative measures of discretionary accruals in absolute values used in the empirical analysis. This table is also used to test the null hypothesis that mean values are equal to zero. *p*-values in the last column of this table show that the mean values of all the alternative measures of discretionary accruals are different from zero, which is used as evidence that listed firms in Spain opportunistically manipulate their financial reports. This finding is in line with García-Meca and Sánchez-Ballesta (2009) where we observe that companies in our sample manipulate their results either by increasing or decreasing them (recall that our measures of discretionary accruals are computed in absolute values).

Table 2 provides information on the evolution over time of our alternative measures of discretionary accruals. We observe that according to measures 2 and 3, discretionary accruals tend to increase from 2006 to 2007. However, the general trend for the three alternative measures (and particularly for ABSDA3) is to reduce discretionary accruals after 2007 until 2013, which corresponds with the aftermath of the financial recession period.

Descriptive statistics are tabulated in Table 3 where we see that a typical controlling shareholder in the Spanish corporate sector holds about 31% of the outstanding shares (OWN1), while insider holdings (INSOWN)—for example, majority shareholders, crossholdings, executives, and government—have more than 65% of the outstanding shares. Regarding the voting rights of the three majority shareholders (OWN123), the concentration goes up to 45.96%. Our first measure of ownership concentration (OWN1) is virtually the same to the one reported by García-Teruel and Martínez-Solano (2010) for their sample of Spanish firms (31.60%), and the proportion of institutional investors (INSTINV), family firms (FAMFIRM), and government-controlled companies (GOVFIRM) are comparable to those mentioned by Saona (2011) for his sample of Spanish non-financial firms. Concerning the board characteristics, we observe that only 30% of the board members are independent (BINDEP) in the Spanish corporate sector. Such a figure is lower than the one reported by Bravo, Abad, and Briones (2015) for their sample of Spanish firms (35.18%). The average number of members (BSIZE) is equal to 10.6, where almost 20% of them hold executive positions in their firms (BDUAL). In this respect,

TABLE 2 Evolution of discretionary accruals

Year	ABSDA1	ABSDA2	ABSDA3
2006	0.0157	0.0201	0.0517
2007	0.0129	0.0281	0.0779
2008	0.0103	0.0227	0.0620
2009	0.0127	0.0256	0.0596
2010	0.0100	0.0212	0.0500
2011	0.0078	0.0170	0.0390
2012	0.0089	0.0160	0.0435
2013	0.0074	0.0144	0.0367
2014	0.0068	0.0155	0.0577
Total	0.0098	0.0201	0.0534

Note: This table provides information on the evolution over time of our alternative measures of discretionary accruals. We use the absolute value of discretionary accruals (ABSDA_{it}) as our measure of the dependent variables.

TABLE 3 Descriptive statistics

Variables	N	Mean	p50	SD	Min	Max	Skewness	Kurtosis
ABSDA1	877	0.0098	0.0055	0.0114	0.0001	0.0654	2.5210	10.4762
ABSDA2	877	0.0201	0.0117	0.0232	0.0000	0.1709	2.1197	8.1839
ABSDA3	867	0.0534	0.0276	0.0743	0.0000	0.5727	3.3281	17.2022
OWN1	877	0.3109	0.2453	0.2368	0.0001	0.9950	0.9286	3.1096
OWN123	877	0.4596	0.4473	0.2377	0.0002	0.9952	0.1093	2.3244
LOGOWN1	877	-1.0681	-1.1238	1.6192	-9.1926	5.2860	-0.0456	6.7870
INSOWN	877	0.6512	0.6957	0.2250	0.0000	0.9994	-0.9804	3.7551
INSOWN2	877	0.4746	0.4840	0.2527	0.0000	0.9988	-0.0102	2.2920
INSTINV	877	0.1908	0.0000	0.4987	0.0000	1.0000	0.1574	1.0248
FAMFIRM	877	0.2025	0.0000	0.2107	0.0000	1.0000	0.3978	1.1582
GOVFIRM	877	0.1041	0.0000	0.1361	0.0000	1.0000	-0.9912	1.0122
BINDEP	877	0.3052	0.3000	0.1830	0.0000	0.8889	0.3235	2.9570
BSIZE	877	10.6470	10.0000	3.8726	3.0000	24.0000	0.6048	3.1701
BDUAL	877	0.1939	0.1667	0.1377	0.0000	0.6667	0.9017	3.6399
BDUAL1	877	0.4608	0.0000	0.4987	0.0000	1.0000	0.1574	1.0248
BGENDER	877	0.1029	0.0833	0.1106	0.0000	0.7500	1.3707	5.9839
BAUDIT	877	0.3667	0.3333	0.1437	0.0000	0.8000	0.3203	3.7193
SIZE	877	20.6775	20.4349	2.1783	14.8320	25.5891	0.0860	2.5892
LEV	877	1.8182	0.8841	2.4157	0.0000	10.2304	2.0942	6.8721
ROA	877	0.0178	0.0222	0.0799	-0.2829	0.3017	-0.6917	7.2416
Z	849	2.3934	1.4746	3.2476	0.0642	21.5928	3.8964	21.0376

Note: The table details the descriptive statistics of the variables used in the empirical analysis. The table shows the number of observations per variable and their mean values, the p50 value, the minimum and the maximum values, as well as the skewness and kurtosis measures. Absolute discretionary accruals are measured according to models 1, 2, and 3 depicted in Section 3.2.1. Variables OWN1 corresponds to the percentage of outstanding shares owned by the controlling and OWN123 is the percentage of shares held by the three major shareholders. LOGOWN1 is the Demsetz and Villalonga (2001) transformation for the ownership concentration variable. INSOWN is a measure of the insider ownership—closely held shares which correspond to the outstanding shares in the portfolio of insiders. Dummy variables were created to identify the nature of the major shareholder as institutional investor (INSTINV), family-owned firm (FAMFIRM), and the government (GOVFIRM). BINDEP corresponds to the proportion of external, independent board members; board size (BSIZE) is measured as the total number of directors that integrate the board of directors; BDUAL measures the proportion of board members that have at the same time executive position in the company, while BDUAL1 is a dummy variable that takes value 1 if there is separation of power between the board chairman and chief executive and 0 otherwise; board gender diversity (BGENDER) is measured as the proportion of female directors sitting in the board of directors, and BAUDIT corresponds to the proportion of members in the audit committee that are independent directors. SIZE variable is computed as the logarithmic transformation of total assets. LEV is calculated as the addition of short- and long-term debt over common equity. ROA is computed as earnings before interest and taxes over total assets. Z measures the default risk based on the Altman (1968) Z-score.

46.08% of the observations in the sample correspond to companies that declared separation of powers between the board chairman and chief executive (BDUAL1). This is evidence of the lack of separation between the roles of the chairman of the board and the chief executive. For instance, in Australia, this coefficient is less than half of that observed in the Spanish case (Chan, Faff, Khan, & Mather, 2013). Approximately only one in every ten board members is a female director (BGENDER). For their sample of Spanish firms, Bravo et al. (2015) show even a lower ratio of female representation on the

TABLE 4 Correlation matrix

#	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
1	ABSDA1	1.00																				
2	ABSDA2	0.52	1.00																			
3	ABSDA3	0.31	0.49	1.00																		
4	OWN1	-0.02	-0.02	-0.01	1.00																	
5	OWN123	-0.02	-0.02	0.01	0.89	1.00																
6	LOGOWN1	-0.01	-0.03	0.00	0.92	0.89	1.00															
7	INSOWN	-0.03	-0.08	-0.01	0.46	0.55	0.54	1.00														
8	INSTINV	-0.02	-0.15	-0.13	-0.08	-0.02	-0.04	-0.01	1.00													
9	FAMFIRM	0.03	0.05	0.03	-0.15	-0.18	-0.13	-0.07	0.05	1.00												
10	GOVFIRM	0.13	0.17	0.10	-0.03	-0.06	-0.05	-0.05	-0.01	0.06	1.00											
11	BINDEP	-0.07	-0.04	-0.04	-0.09	-0.13	-0.04	-0.17	0.09	-0.03	-0.14	1.00										
12	BSIZE	-0.06	-0.19	-0.19	-0.22	-0.25	-0.23	-0.13	0.41	0.24	0.06	-0.08	1.00									
13	BDUAL	0.07	0.05	0.12	0.19	0.20	0.14	0.09	-0.13	-0.25	0.08	-0.08	-0.34	1.00								
14	BDUAL1	-0.02	0.01	0.01	0.10	0.13	0.11	0.16	0.02	0.04	-0.09	-0.20	-0.08	-0.15	1.00							
15	BENDER	-0.03	-0.07	-0.09	0.17	0.16	0.14	0.10	0.05	-0.23	-0.12	0.06	-0.12	0.03	-0.05	1.00						
16	BAUDIT	0.02	0.07	0.09	0.20	0.25	0.17	0.12	-0.18	-0.25	-0.10	0.07	-0.63	0.23	0.00	0.23	1.00					
17	SIZE	-0.10	-0.26	-0.16	-0.03	-0.12	-0.04	-0.07	0.44	0.29	0.05	0.11	0.65	-0.10	-0.13	-0.02	-0.41	1.00				
18	LEV	-0.01	-0.08	0.06	-0.07	-0.13	-0.11	-0.06	0.08	0.12	0.07	-0.10	0.21	-0.02	-0.08	0.05	-0.15	0.36	1.00			
19	ROA	-0.08	-0.10	-0.05	0.08	0.07	0.04	0.05	-0.05	0.03	0.02	0.02	0.06	0.13	-0.08	0.00	0.07	0.12	-0.29	1.00		
20	Z	-0.01	0.05	-0.02	0.05	0.11	0.03	0.07	-0.16	-0.23	-0.07	0.16	-0.23	0.11	-0.02	0.01	0.26	-0.26	-0.34	0.37	1.00	
21	GOVINDEX	0.00	-0.01	-0.06	-0.02	-0.01	-0.03	-0.02	0.00	0.01	0.36	-0.05	0.05	0.01	-0.03	-0.06	-0.06	0.01	0.04	-0.08	-0.06	1.00

Note: This table presents the bivariate correlations. All variables are defined in Table 3.

board, achieving a modest 6.23%. Finally, regarding the audit committee independence (BAUDIT), we observe that on average, it is comprised of 36.67% of independent directors.

Among the control variables, we observe that the return on assets (ROA) achieves 1.8% and total debt outstanding is 1.8 times the common equity (LEV).

Correlation matrix is tabulated in Table 4. We do not observe significantly high correlations between the variables except for those that are used as alternative measures of the same construct (e.g., those variables that measure discretionary accruals and ownership structure features).

4.2 | Multivariate analysis

Since the multivariate analysis is developed with panel data estimations, following Blundell and Bond (1998), it is assumed that there is stationarity of the panels. Consequently, we used a Fisher-type, Choi (2001) contrast that all the panels contain a unit root to test the stationarity of the variables in the models.

Table 5 shows that the four tests strongly reject the null hypothesis that all the panels contain unit roots for all the variables with a minor exception of SIZE variable. These findings are held as evidence that all the series in the panel are stationary.

TABLE 5 Distribution tests

Variables	Inverse χ^2 (P)	Inverse normal (Z)	Inverse logit t (L*)	Modified Inv. χ^2 (Pm)
ABSDA1	1744.42***	-26.68***	-42.94***	67.55***
ABSDA2	2,310.02***	-31.18***	-57.16***	94.00***
ABSDA3	1963.41***	-29.32**	-49.19***	78.66***
OWN1	1928.20***	-32.50***	-24.35***	193.00***
OWN123	2,583.53***	-66.35**	-53.95***	72.90*
LOGOWN1	1853.48**	-16.60***	-74.20***	38.06***
INSOWN	924.90***	-32.70***	-14.80***	14.85***
INSTINV	974.66**	-48.05***	-93.23***	28.39***
FAMFIRM	1,205.87**	-20.59**	-49.06*	53.98***
GOVFIRM	1,449.50***	-58.04***	-92.85**	93.72**
BINDEP	1,377.40***	-19.49***	-49.63***	57.40***
BSIZE	1,038.30***	-20.57***	-57.26**	52.90***
BDUAL	1,449.80***	-20.74***	-72.70***	26.90***
BDUAL1	1835.77***	-85.20**	-16.87***	84.30***
BGENDER	1944.90*	-24.40**	-12.40***	24.91***
BAUDIT	711.60***	-89.30**	-28.46***	90.42*
SIZE	243.48**	7.31**	6.27	-0.72
LEV	622.58***	-4.26***	-10.06***	16.82***
ROA	628.03***	-6.23***	-10.35***	17.06***
Z	792.25***	-6.05***	-14.58**	25.81**

Note: This table includes the inverse χ^2 , inverse normal, inverse logit, and modified inverse χ^2 tests that there is no evidence of a unit root in the series under consideration.

TABLE 6 Multivariate analysis: Firm-level corporate governance systems

Variables	Panel A			Panel B			Panel C		
	ABSDA1	ABSDA2	ABSDA3	ABSDA1	ABSDA2	ABSDA3	ABSDA1	ABSDA2	ABSDA3
OWN1	0.0036 (1.0677)	0.0114*** (4.3268)	0.0102 (1.4743)						
OWN123				-0.0099*** (-9.4324)	0.0011 (0.4269)	-0.0170* (-1.9884)			
LOGOWN1							-0.0002** (-2.6423)	-0.0005* (-1.9096)	-0.0043*** (-4.8343)
BINDEP	-0.0090** (-2.4280)	-0.0058* (-1.9638)	-0.0175 (-0.4277)	-0.0012 (-1.0066)	-0.0121*** (-3.8305)	-0.0111*** (-3.3269)	-0.0013*** (-4.4669)	-0.0003 (-1.3428)	-0.0004 (-0.9476)
BSize	-0.0005** (-2.6125)	-0.0001 (-0.5419)	-0.0018*** (-4.2919)	-0.0005*** (-5.5963)	0.0001 (0.2011)	-0.0003** (-2.0108)	0.0085*** (6.9819)	-0.0083*** (-4.8453)	-0.0050 (-1.6129)
BDUAL	0.0017 (0.1020)	0.0017** (2.0286)	0.0900*** (2.9780)	0.0063*** (2.8152)	0.0355*** (7.0951)	0.0131** (2.2589)	0.0011* (2.2095)	0.0001*** (3.1205)	0.0005* (1.7033)
BGENDER	-0.0005*** (-4.1566)	-0.0016** (-2.4762)	-0.0311*** (-3.4155)	-0.0110*** (-4.6289)	-0.0120* (-1.6912)	-0.0272*** (-4.2633)	-0.0089 (-0.2489)	-0.0102* (-1.7588)	-0.0163*** (-2.7561)
BAUDIT	-0.0078*** (-2.6814)	-0.0054 (-1.3541)	0.0042 (0.2978)	-0.0083*** (-4.1263)	-0.0026** (-2.4912)	-0.0075 (-1.5212)	-0.0114*** (-4.1641)	-0.0092*** (-6.3568)	-0.0148*** (-2.9430)
SIZE	0.0004 (0.9355)	-0.0032*** (-7.6141)	-0.0043*** (-5.6537)	-0.0008*** (-4.1773)	-0.0003 (-0.3025)	-0.0001* (-2.2428)	-0.0054* (-1.8885)	-0.0039 (-1.2102)	-0.0114*** (-2.9619)
LEV	0.0009 (0.3243)	0.0003* (1.8306)	0.0024*** (7.3632)	0.0003*** (3.4142)	0.0005** (2.0785)	0.0003 (0.0120)	0.0007*** (2.9795)	0.0001 (0.3958)	0.0012 (0.6923)
ROA	-0.0541*** (-10.6964)	-0.0414*** (-10.0285)	-0.0321*** (-3.1111)	-0.0049*** (-3.5847)	-0.0407*** (-9.4536)	-0.0200*** (-4.6179)	-0.0006*** (-7.1308)	0.0003 (0.7254)	-0.0001 (-0.4029)
Z	0.0005** (2.0099)	0.0009*** (2.8152)	0.0005 (1.020)	0.0004*** (3.0007)	-0.0002 (-0.6129)	0.0018*** (4.6179)	0.0276** (2.0018)	0.0125*** (3.1205)	0.0253** (2.0018)

(Continues)

TABLE 6 (Continued)

Variables	Panel A			Panel B			Panel C		
	ABSDA1	ABSDA2	ABSDA3	ABSDA1	ABSDA2	ABSDA3	ABSDA1	ABSDA2	ABSDA3
INSTINV	(2.0926) -0.0178*** (-2.7300)	(5.3429) -0.0287*** (-5.2664)	(0.7979) -0.0870*** (-3.7152)	(4.4858) -0.0052*** (-3.1133)	(-0.3888) -0.0189*** (-6.3382)	(10.3489) -0.0012 (-0.3109)	(10.3192) -0.0005*** (-4.2924)	(8.4794) 0.0002 (0.6246)	(2.5625) -0.0000 (-0.0955)
FAMFIRM	-0.0168 (-1.0133)	-0.0219 (-1.6529)	0.0304 (1.1530)	-0.0033 (-0.6337)	-0.0105 (-1.1458)	0.0072 (1.1458)	0.0023 (0.2330)	-0.0020 (-0.8225)	0.0006 (1.3937)
GOVFIRM	0.0012 (0.1650)	0.0016 (0.4732)	-0.0002 (-0.1821)	0.0005 (0.4579)	0.0002* (1.6635)	0.0010 (0.0961)	-0.0057 (-0.9850)	0.0102* (1.9691)	0.0066 (0.3290)
Observations	844	831	844	844	831	844	844	831	844
Number of iden	119	120	120	120	119	120	119	120	119
F test	414.50***	372.24***	554.11***	370.40***	205.60***	81.51***	621.80***	553.02***	487.82***
AR(2)	8.120	6.117	4.082	1.196	0.659	-0.567	-0.165	-0.165	-0.165
Hansen test	99.670	99.670	99.670	107.500	105.600	110.800	96.320	96.320	96.320
VIF	1.58	1.62	1.62	1.57	1.58	1.57	2.10	1.73	1.69

Note: Panels A, B, and C show the regression estimates which explain the absolute discretionary accruals measured through the different models (ABSDA1, ABSDA2, and ABSDA3). All the variables are described in Section 3. Fisher-type test is used to contrast the joint significance of the independent variables. Second-order autocorrelation test (AR(2)) is used to test the null hypothesis that there is no serial correlation of the stochastic error. The Hansen contrast is used to test the hypothesis that the instruments are properly chosen. VIF contrast is used to test the existence of multicollinearity problems. Industry and time dummy variables are included in the models but not reported. Standard errors in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

In panels A, B, and C of Table 6, and in all the subsequent tables, we estimate the parameters corresponding to the model specification (8). These estimations are computed with the Generalized Method of Moments (GMM) with the system estimator (SE) (Koh, 2003). The efficiency of this method depends on the assumption that the independent variables are valid instruments and that the error term does not exhibit serial correlation. We used the second-order serial correlation test (AR(2)) normally distributed under the null hypothesis that there is no serial correlation of the stochastic error. Estimations are computed with robust standard errors. Additionally, the Hansen–Sargan contrast is used to test the over-identifying restrictions that the instruments are valid. This test is distributed as a chi-squared under the null hypothesis that the instruments are valid. The variance inflation factor (VIF) test is used to determine the inexistence of autocorrelation problems in the estimations. Finally, the Fisher-type test (F) is used to ensure that all the independent variables are jointly significant. All these statistics are reported at the bottom of the regression tables as diagnostic tests of the most important outputs.

Regression outputs are included in panels A, B, and C of Table 6, for our three alternative measures of ownership concentration (OWN1, OWN123, and LOGOWN1) as right-hand-side variables. All the panels include also the three measures used for the absolute discretionary accruals (ABSDA1, ABSDA2 and ABSDA3). We can observe that ownership structure (OWN1) impacts positively only on one of the alternative measures of earnings management (see the second regression in Table 6). Literature has traditionally classified the Spanish legal system under the French civil-law regime, characterized by relatively weak protection of investors' rights and enforcement of the law. As a result, ownership structures in these institutional environments exhibit high concentration and pyramidal structures. This preliminary result indicates that more concentrated ownership structures in the hands of controlling shareholders lead to higher levels of earnings manipulation. This finding seems to be contrary to our expected hypothesis. Nevertheless, a deeper analysis of the OWN1 variable demonstrates the opposite as observed in the as observed in panels B and C in the same table. For instance, in the descriptive statistics (e.g., see Table 3) it is observed that the OWN1 variable has a high skewedness (0.93) which is greater than the expected value of 0 for a normal distribution. Similarly, its kurtosis is also high (3.11), indicating the existence of heavy tails. Consequently, the lack of normality in the distribution of this variable might be biasing these preliminary findings to some extent. To solve this problem, we used the Demsetz and Villalonga (2001) transformation for the ownership concentration variable (LOGOWN1) in the subsequent estimations in panel C, and we also used the alternative corporate ownership concentration measured as the voting rights of the three major shareholders (OWN123) exhibited in panel B. The impact of these variables on our alternative measures of earnings manipulation is statistically significant and consistently negative as shown in panels B and C. Therefore, we might suggest that once the ownership concentration variable is properly adjusted, the discretionary capacity of executives to manage the earnings is reduced as the voting rights of the controlling shareholders increase. This might be used as evidence to accept our first hypothesis, which suggested that more concentrated ownership structures behave as enhanced corporate governance systems which constrain the managerial discretion for overstating the financial reports and consequently in fooling investors. We believe that the transformed measure of the ownership concentration (LOGOWN1) is more suitable than the regular one (OWN1). LOGOWN1 and OWN123 variables as measures of ownership concentration can be used alternatively as robustness checks of the negative relationship between these variables and the measures of earnings manipulation.

Regarding the nature of the majority shareholder, our results reveal that only the institutional investors (INSTINV) perform an efficient monitoring role in constraining earnings management. The variable that describes family-owned (FAMFIRM) firms is not statistically significant in any regression. Government-controlled companies (GOVFIRM), however, are significant only in two. According to

Chinn and Coibion (2014), the influence of institutional investors on corporate managers can be both direct by monitoring as blockholders and indirect through their ability to sell their shares. Hence, institutional investors as external majority shareholders enhance corporate systems with their voting by influencing managers' value maximizing decisions (Jara, López, & López-de-Foronda, 2012), and consequently, negatively impacting the earnings manipulation. This governance system is referred to as the voice mechanism (Gillan & Starks, 2003). Hence, our results strongly support these arguments suggesting that when the majority shareholder is an institutional investor, managers have less room to manipulate the financial reports.

Concerning the characteristics of the board of directors and their impact on earnings management, we observe that the empirical findings do show conclusive evidence on the board independency. Our results demonstrate that the higher participation of outside directors (BINDEP), the lower the level of earnings manipulation. As a governance tool, independent directors are less biased in their opinions than internal directors because of the lack of personal interest in the company, the inexistence of family ties in the company's ownership structure, and their more objective decision-making process. So outside, uninterested directors are more likely to constrain the managerial opportunistic behavior and earnings management. For a sample of US firms that had an occurrence of financial statement fraud publicly reported and firms that had no incidents of fraud, Beasley (1996) concludes that inclusion of a larger proportion of outside directors on boards reduces the likelihood of financial statement fraud. Similarly, for Hong Kong firms, Jaggi et al. (2009) find that more independent corporate boards are associated with lower magnitude of discretionary accruals. Thus, our results are comparable to those found in developed countries with diverse institutional settings.

Although the literature has not shown conclusive findings concerning the size of the board of directors (BSIZE), the results for our sample of Spanish firms show consistently a negative relationship between the number of members sitting in the board and the managerial capacity to misreport the financial information. Larger boards are more likely to be independent and have more capacity to oversee the managerial performance and might perform better monitoring of different aspects of managerial performance. Smaller boards face higher limitations as they do not account with enough tools to control the different managerial activities. Consequently, our results show that larger boards are better at preventing earnings management. This evidence is similar to that shown by Xie et al. (2003) who emphasize that larger boards may be able to draw from a broader range of experience with more independent, financially knowledgeable directors, suggesting that larger boards are associated with lower levels of discretionary accruals.

One of the major concerns in performing efficient corporate governance mechanisms is the CEO duality role. This is defined as the situation when one person holds roles both as board chair and CEO. Our findings show that such duality (BDUAL) increases the likelihood of opportunistic manipulation of financial reporting. All except one of our parameter estimates are positive and statistically significant, which allows us to accept our fifth hypothesis, which suggested that such dual roles increase active earnings management activities. Our results are in line with Abdul Rahman and Haneem Mohamed Ali (2006) who found that earnings quality is weakened by the existence of CEO duality. This practice in Spanish firms does not necessarily follows the recommendations in the Cadbury Report that suggests that firms should have no role duality to ensure a balance of power in the boardroom (Hashim & Devi, 2008). Further examination of the duality role is moderated below in a subsequent analysis with ownership structure features (see Table 8).

The board gender diversity (BGENDER) has been suggested as a new determinant of earnings management in the most recent literature (Kyaw et al., 2015; McGuinness et al., 2015). Our results are in line with those of Gul et al. (2011) where we find that a larger proportion of female board members improves the quality of board discussion and increases the ability of the board to provide

a better oversight of the firm's disclosures and financial reporting. Although our sample shows that only 10.29% of the board members are female members, we observe that even this relatively small gender diversity contributes positively to the quality of financial statements. Kyaw et al. (2015) show that Spain is one of the European countries with the lowest gender diversity. According to Barua et al. (2010), gender diversity mitigates earnings management as a result of the female tendency to be led by stronger ethical values. Therefore, our results allow us to accept our sixth hypothesis that a larger proportion of female members reduces the earnings management capacity of executives.

Another board characteristic that is worth considering corresponds to the independence of the board audit committee (BAUDIT). Xie et al. (2003) suggest that the presence of financially sophisticated and independent board members on audit committees is associated with a reduced extent of earnings management. The audit committee's role is oversight and monitoring of a firm's financial reporting, and consequently, this committee grants the quality of the financial information. Our results support our seventh research hypothesis that suggested that more independent board members in the audit committee mitigate the managerial opportunistic behavior in overstating the accounting information. As observed in Table 6, the BAUDIT variable is statistically significant in six regressions, reporting negative coefficients.

Finally, the vector corresponding to the control variables in Table 6 (e.g., SIZE, LEV, ROA, and Z) suggests a negative impact of each one of these control variables on discretionary accruals, except for the LEV variable, which shows a positive relationship with discretionary accruals. For instance, the findings are quite consistent on the fact that larger firms (SIZE) overstate financial earnings to a lesser extent than smaller firms. Accordingly, we might suggest that larger firms are more transparent and are followed by both analysts and the market, which constrains the managers' discretionary capacity to manipulate financial reports. Similarly, firms' profitability (ROA) is also negatively related to earnings management, emphasizing that financial reports of lower quality diminish the financial performance of companies. Finally, the default risk (Z) also seems to show a negative relationship with earnings management. Although in Table 6 the variable Z exhibits a positive sign, by construction, as this variable increases, the default risk drops. Thus, this parameter must be interpreted in the opposite direction. In this case, as the default risk increases because of a poor financial position, managers are less predisposed to manage the earnings.

Our findings also show that more leveraged companies (LEV) seem to be more prone to manipulate financial reports. Berlin and Loeys (1988) suggest that debt contracts with covenants are an efficient monitoring system which enhances the firm performance. Similarly, Barclay and Smith (1996) and Delgado (2003) distinguish restrictive from affirmative debt covenants as those applicable to firms with high leverage. This suggests that when highly restrictive covenants are applied, there is less room for opportunistic managerial behavior, leading to a negative impact on discretionary accruals. Our findings, however, drive outputs in the opposite direction, meaning that managers engage more actively in financial statements manipulation as leverage increases. Therefore, a plausible explanation is that in order to get credits and external funding in more favorable conditions, management opts for overstating the financial reports. Hence, in the context of Spanish firms, managers are impelled to misreport the real economic performance of the company to fulfill the debt covenants. This finding is similar to what San Martín Reyna (2013) finds for Mexican companies, where it is suggested that leverage positively impacts earnings management in presence of growth opportunities.

Table 7 is designed to test the hypothesis concerning the relationship between inside ownership (INSOWN) and the earnings manipulation (ABSDA1, ABSDA2, and ABSDA3). First, in Table 7 we can see that the results discussed above hold and are consistent with our interpretations. Concerning INSOWN variable, our results show that a negative and statistically significant relationship exists between the insider ownership and the discretionary accruals as observed in panel A. Consequently,

when the ownership that is closely held, measured as the stake of outstanding shares held by cross holdings, increases (e.g., corporations and holding companies, government, employees, and insiders such as managers and officers), the discretionary behavior of managers in misreporting the actual performance of the company is ameliorated. According to the precepts of the agency and stewardship theories, this finding is supported by the convergence of interests between managers and shareholders of today's modern firm. On the one hand, the agency theory (Jensen & Meckling, 1976) suggests that managers are utility seekers that might be prone to expropriate the shareholders' wealth in their own benefit. However, when insider ownership increases, the difference between the firm's ownership and its control is less significant and, consequently, the opportunistic behavior of managers is minimized, thus leading to a negative impact on earnings management when insiders hold significant proportions of outstanding shares. On the other hand, as another informative perspective to analyze the relationship between insider ownership and discretionary capacity of managers, the stewardship approach (Davis, Schoorman, & Donaldson, 1997; Miller & Le Breton-Miller, 2006) posits that many leaders and executives aspire to higher purposes at their jobs and that they are not simply self-serving economic individuals, but often act with altruism for the benefit of the organization and its stakeholders. This approach would also support the reduction of discretionary accruals as insider ownership increases. Our results indeed are similar to those reported by Warfield et al. (1995) which suggest that when managers have significant stakes in the company's equity, they have less motivation to misreport the financial information.

Panel B of Table 7 provides evidence of a non-linear relationship between the inside ownership and the extent of the earnings management. The critical value of *INSOWN* corresponds to the point at which the earnings management is maximized when the insider ownership increases. For instance, the fourth regression in Table 7 suggests that when insider ownership increases, the earnings management increases too, but only up to the critical point of 51.24%.² Only when insider ownership exceeds that threshold, the managerial opportunistic behavior is constrained as a result of the alignment of interests between managers and shareholders, and consequently, the earnings management drops. Similar findings are observed in the last regression on panel B of Table 7. Therefore, we find evidence of the existence of a non-monotonic inverse U-shaped relationship between the insider ownership and the earnings manipulation. The appropriate Lind–Mehlum test (Lind & Mehlum, 2010) is used to check the significance of this non-linear relationship. The null hypothesis of a monotone or U-shape is rejected as seen at the bottom of Table 7. This evidence allows us to accept our second research hypothesis. This finding emphasizes that in the increasing portion of the insider ownership–discretionary accruals relationship, the entrenchment hypothesis crowds out the convergence hypothesis. However, at relatively higher levels of insider ownership, there is no difference between management and shareholder interests and, consequently, the agency problems are diluted, with the subsequent minimization of opportunistic manipulation of financial reporting. Hence, the findings show that in the Spanish corporate sector, the stewardship approach takes place only at relatively high levels of closely held shares (e.g., at a level higher than 51.24% of insider ownership as shown in the fourth regression of Table 7). For comparison purposes, for Taiwan-listed firms, Yang, Lai, and Leing Tan (2008) examined the relation between managerial ownership structure and earnings management, and found a non-monotonic inverse U-shaped relationship between executive ownership and discretionary accrual. According to Warfield et al. (1995), and also similar to our findings for Spanish firms, managers of low managerial ownership have greater incentives to manage accounting numbers to relieve or relax the behavioral constraints imposed in accounting-based contracts; however, when their ownership is high, then the alignment of interests rises and, consequently, the incentives for discretionary manipulation declines. If we look at the typical Spanish firm, the average value of *INSOWN* variable is about 65.12% of the outstanding shares (see Table 3). Consequently, most of the Spanish

TABLE 7 Multivariate analysis: Firm-level corporate governance systems

VARIABLES	Panel A			Panel B		
	ABSDA1	ABSDA2	ABSDA3	ABSDA1	ABSDA2	ABSDA3
INSOWN	-0.0043*** (-4.0799)	-0.0007 (-1.0244)	-0.0188*** (-5.5787)	0.0165*** (5.6068)	-0.0039 (-0.4214)	0.0106* (1.8173)
INSOWN ²				-0.0161*** (-5.6092)	-0.0144* (-1.8050)	-0.0155*** (-3.5586)
Critical Value INSOWN				0.5124	-	0.3419
BINDEP	-0.0058*** (-3.6633)	-0.0009 (-0.5871)	0.0034 (0.8708)	-0.0016 (-1.3269)	0.0042 (0.8288)	-0.0072* (-1.7607)
BSIZE	-0.0004*** (-4.4560)	0.0008 (0.0178)	-0.0005** (-2.0478)	-0.0001 (-0.8183)	-0.0005** (-2.1557)	-0.0005*** (-3.1866)
BDUAL	0.0030 (0.3366)	0.0044*** (6.6539)	-0.0275 (-1.3747)	0.0170** (2.0384)	0.0018 (0.0676)	-0.0114 (-0.6215)
BGENDER	0.0032 (1.4191)	-0.0017** (-2.6577)	-0.0061* (-1.8785)	-0.0033*** (-3.6145)	-0.0120 (-1.6415)	-0.0141** (-2.5778)
BAUDIT	-0.0070*** (-2.9319)	0.0019 (0.9792)	-0.0074** (-2.3813)	-0.0064** (-2.4199)	0.0043 (1.1031)	-0.0043 (-1.1668)
SIZE	-0.0004** (-2.0257)	-0.0003 (-1.5825)	-0.0002 (-0.3210)	-0.0011 (-0.2299)	0.0005 (0.9834)	-0.0018*** (-3.8606)
LEV	0.0004*** (6.0540)	0.0001 (0.6103)	0.0004*** (2.7689)	0.0002 (1.4445)	0.0004*** (2.9857)	0.0001 (0.3548)
ROA	-0.0257*** (-8.0871)	-0.0140*** (-6.7100)	-0.0374*** (-8.6949)	-0.0137*** (-6.7024)	-0.0351*** (-6.8110)	-0.0301*** (-9.1328)
Z	0.0006*** (6.4596)	0.0005*** (4.4939)	0.0001 (0.3840)	0.0003*** (2.6284)	-0.0000 (-0.0714)	0.0007*** (3.9552)
INSTINV	-0.0064 (-1.0819)	-0.0159*** (-4.3470)	-0.0059 (-0.7787)	-0.0108** (-2.4351)	-0.0023 (-0.2788)	-0.0171** (-2.1433)
FAMFIRM	0.0119 (1.2439)	-0.0062 (-1.0243)	-0.0347 (-0.7642)	0.0071 (0.8071)	-0.0065 (-0.2399)	-0.0207 (-1.1327)
GOVFIRM	-0.0002 (-0.0011)	0.0010 (0.8344)	0.0008 (1.9784)	0.0010 (0.1284)	0.0009 (0.3201)	-0.0016 (-0.5620)
Observations	828	844	817	844	817	831
Number of iden	119	120	119	120	119	120
F test	430.07***	390.55***	306.12***	244.50***	356.08***	412.92***
AR(2)	4.382	9.122	8.204	12.088	16.318	14.225
Hansen test	99.670	74.128	64.550	71.181	84.294	67.020
VIF	3.721	3.730	3.140	1.668	1.630	1.6491

(Continues)

TABLE 7 (Continued)

VARIABLES	Panel A			Panel B		
	ABSDA1	ABSDA2	ABSDA3	ABSDA1	ABSDA2	ABSDA3
Lind–Mehlum test	-	-	-	3.721***	1.229	2.473***

Note: Panels A and B show the regression estimates which explain the absolute discretionary accruals measured through the different models (ABSDA1, ABSDA2, and ABSDA3). All the variables are described in Section 3. Fisher-type test is used to contrast the joint significance of the independent variables. Second-order autocorrelation test (AR(2)) is used to test the null hypothesis that there is no serial correlation of the stochastic error. The Hansen contrast is used to test the hypothesis that the instruments are properly chosen. VIF contrast is used to test the existence multicollinearity problems. The Lind–Mehlum contrast is used to test the non-monotonic relationship between INSOWN variable and the dependent variable. Industry and time dummy variables are included in the models but not reported. Standard errors in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

companies are operating under the convergence hypothesis regarding the insider ownership–earnings management relationship.

Given that all the board characteristics except the board duality (BDUAL), negatively impacted the magnitude of earnings management, we are therefore interested in assessing the moderating effect that the separation of powers between the board chairman and the managers (BDUAL1) has on the corporate ownership structure features and its impact on earnings management (ABSDA1). In doing so, we designed and reported the estimates of Table 8 by including in the regressions the interacted variables that measure the ownership characteristics (OWN1, OWN123, LOGOWN1, and INSOWN) and BDUAL1. The first significant result corresponds to the interacted variable that associates the separation of powers between the board chairman and the executives (BDUAL1, a dummy variable) with the transformed ownership concentration (LOGOWN1, a continuous variable) as observed in the second column of Table 8. Hence, we entered the variable corresponding to the multiplication of both variables as LOGOWN1*BDUAL1. In this case we observe that for those companies that reported separation of powers between the chairman and the executives (e.g., BDUAL1 takes value 1), as the ownership concentration increases (LOGOWN1), the degree of the earnings manipulation decreases statistically more than in the case of companies that do not have separation of power between these two mentioned roles. This can be observed in the comparison of the reported coefficient of LOGOWN1 and the addition of the coefficient estimates of LOGOWN1 + LOGOWN1*BDUAL1, which are -0.0017 and -0.0023 , respectively. Hence, briefly, the findings support the idea that as the ownership concentration increases—proxied by LOGOWN1—earnings management are more efficiently reduced in companies that exemplify separation of powers than in companies where such separation of power does not exist. This finding is robust to the alternative measure of ownership concentration used in this study. In this case, as the outstanding shares held by the three major shareholders increase (OWN123), we also observe that managerial discretion to manipulate the financial reports is more efficiently constrained in the scenario of companies with separation of power than in the case of firms with clear dual roles. This is observed by comparing the magnitude of the coefficients of OWN123 + OWN123*BDUAL1 which is equal to -0.0051 in the third regression in Table 8, representing companies that have separation of powers, versus the coefficient of OWN123 in the same regression which amounted to only -0.0008 .

Finally, another insightful finding corresponds to this which moderates the impact of BDUAL1 variable on INSOWN. Similarly to before, we also observe that the convergence of interests hypothesis is even stronger as the insider ownership increases in the case of companies with separation of powers

TABLE 8 Multivariate analysis: Moderated effect of board duality on ownership structure features

VARIABLES	ABSDA1	ABSDA1	ABSDA1	ABSDA1
OWN1	0.0118			
	(0.7198)			
OWN1*BDUAL1	0.0033			
	(0.3763)			
OWN1 + OWN1*BDUAL1	0.0151			
LOGOWN1		-0.0017***		
		(-20.2379)		
LOGOWN1*BDUAL1		-0.0006***		
		(-4.1349)		
LOGOWN1 + LOGOWN1*BDUAL1		-0.0023		
OWN123			-0.0008*	
			(-1.5566)	
OWN123*BDUAL1			-0.0043***	
			(-5.4992)	
OWN123 + OWN123*BDUAL1			-0.0051	
INSOWN				-0.0021**
				(-2.0757)
INSOWN*BDUAL1				-0.0003*
				(-1.5806)
INSOWN + INSOWN*BDUAL1				-0.0024
BINDEP	-0.0111***	-0.0126*	-0.0127	-0.0087
	(-11.6397)	(2.2544)	(0.0147)	(-0.0134)
BFSIZE	-0.0001***	0.0002	-0.0002***	-0.0001
	(-2.6688)	(0.1456)	(-3.3650)	(-1.2273)
BGENDER	-0.0132***	-0.0093***	-0.0125***	-0.0170***
	(-6.1012)	(-4.2167)	(-4.9423)	(-7.0390)
BAUDIT	-0.0125***	-0.0052***	-0.0146***	-0.0091***
	(-6.2247)	(-3.6457)	(-9.7538)	(-4.3742)
SIZE	-0.0003*	-0.0005**	-0.0007***	-0.0006**
	(-1.7755)	(-2.6180)	(-3.8766)	(-2.0997)
LEV	0.0004***	0.0008***	0.0003	0.0004**
	(5.0811)	(7.8724)	(0.1115)	(2.1351)
ROA	-0.0359***	-0.0415***	-0.0287***	-0.0302***
	(-19.7266)	(-19.6899)	(-13.0321)	(-19.8998)
Z	-0.0005***	-0.0007***	-0.0008***	-0.0008***
	(-4.6732)	(-6.7668)	(-10.4227)	(-11.8266)
INSTINV	-0.0001	-0.0079***	-0.0115**	0.0095
	(-0.1728)	(-16.2457)	(-2.2593)	(0.049)

(Continues)

TABLE 8 (Continued)

VARIABLES	ABSDA1	ABSDA1	ABSDA1	ABSDA1
FAMFIRM	-0.0035 (-0.3944)	-0.0057 (-1.3732)	-0.0206 (-0.6994)	-0.0196 (-0.7362)
GOVFIRM	-0.0002 (-0.0821)	0.0010 (0.1763)	0.0007 (0.0036)	0.0014 (0.2426)
Observations	828	828	816	828
Number of iden	119	119	119	119
F test	544.40***	4,641.00***	57.60**	282.40***
AR(2)	-1.416	-1.456	-1.422	-1.600
Hansen test	109.900	108.800	111.500	108.800
Linear restriction test	0.615	4.145***	2.160*	2.730**

Note: This table shows the regression estimates which explain the absolute discretionary accruals measured by ABSDA1 variable, as a function of the interaction of board duality role and ownership structure features. All the variables are described in Section 3. Fisher-type test is used to contrast the joint significance of the independent variables. Second-order autocorrelation test (AR(2)) is used to test the null hypothesis that there is no serial correlation of the stochastic error. The Hansen contrast is used to test the hypothesis that the instruments are properly chosen. VIF contrast is used to test the existence multicollinearity problems. Linear restriction test is used to assess the addition of the interacted variables of board duality role and ownership structure features. Industry and time dummy variables are included in the models but not reported. Standard errors in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

(see coefficient of $INSOWN + INSOWN \cdot BDUAL1$ in the last regression of Table 8). However, when there is no separation of powers, the insiders' ownership as a governance device is not as efficient in reducing the magnitude of earnings management (see coefficient of $INSOWN$ in the last regression of Table 8). The linear restriction test is reported at the bottom of the table to assess whether the addition of the interacted (multiplicative) variables and the stand-alone variables are statistically significant. As observed, in all except in the first regression, such additions are different from zero, and therefore can be interpreted as we did above.³

Finally, in Table 9 we entered in the analysis the variable $GOVINDEX$ which is a country-level governance variable. Indeed, this table combines at the same time firm- and country-level governance variables as drivers of discretionary accruals (ABSDA1). All firm-level variables remain consistent with our previous findings. $GOVINDEX$ variable is an average worldwide governance indicator taken from the updated dataset of Kaufmann et al. (2011). This index includes the following six dimensions of governance by country: voice and accountability, political stability and absence of violence/terrorism, government effectiveness, regulatory quality, rule of law, and control of corruption. The higher the index, the better the governance in the country.

As we explained earlier in our research, Spain is a civil-law country with French influence in its legal system. Leuz et al. (2003) show evidence that investor protection influences corporate earnings management in developed economies. They differentiate outsider economies, characterized by diluted ownership structures and strong investor protection, from insider economies, which are countries with concentrated ownership stakes and less developed markets such as the case of Spain. Leuz et al. (2003) support the argument that in insider countries, managers manipulate the financial information more actively. In fact, our results confirm these predictions. As we can observe in the regression outputs of Table 9, $GOVINDEX$ shows systematically a negative and statistically significant relationship with ABSDA1. Consequently, when the institutional environment improves in the Spanish context and the regulatory system is enhanced and corruption is efficiently controlled, we observe that the

TABLE 9 Multivariate analysis: Firm- and country-level governance systems

Variables	ABSDA1	ABSDA1	ABSDA1	ABSDA1	ABSDA1
OWN1	-0.0057*** (-3.5662)				
OWN123		-0.0099*** (-9.4324)			
LOGOWN1			-0.0010*** (-7.8659)		
INSOWN				-0.0005 (-0.8791)	0.0130*** (3.0258)
INSOWN2					-0.0121*** (-3.0600)
Critical Value of INSOWN	-	-	-	-	0.5372
BINDEP	-0.0010 (-1.2871)	0.0012* (2.0066)	0.0007 (0.7354)	-0.0007 (-0.5053)	-0.0005 (-0.4356)
BSIZE	-0.0004*** (-5.9444)	-0.0005*** (-5.5963)	-0.0003*** (-5.0784)	-0.0006*** (-5.8769)	-0.0005*** (-5.0950)
BDUAL	0.0085*** (5.7282)	0.0063* (1.8152)	0.0179*** (14.2221)	0.0098*** (4.5805)	0.0106*** (4.8789)
BGENDER	-0.0101*** (-6.4099)	-0.0110*** (-4.6289)	-0.0128** (-2.7284)	-0.0100** (-2.9517)	-0.0116*** (-7.8493)
BAUDIT	-0.0076 (-0.6246)	-0.0083*** (-4.1263)	-0.0091*** (-4.8978)	-0.0081 (0.6490)	-0.0100* (-2.3195)
SIZE	-0.0006*** (-3.0448)	-0.0008*** (-4.1773)	-0.0001 (-0.6802)	-0.0005* (-1.9059)	-0.0004 (-1.3959)
LEV	0.0003*** (3.4506)	0.0003*** (3.4142)	-0.0000 (-0.3502)	0.0005*** (8.0477)	0.0004*** (5.0733)
ROA	-0.0010 (-0.3669)	-0.0049*** (-3.5847)	-0.0134*** (-14.2120)	-0.0071*** (-3.4724)	-0.0061*** (-2.6675)
Z	0.0003*** (3.5439)	0.0004*** (4.4858)	0.0004*** (4.3264)	0.0002** (2.5662)	0.0002** (2.1661)
INSTINV	-0.0013*** (-3.6734)	-0.0016*** (-4.0406)	0.0006 (0.4944)	-0.0030 (-0.6102)	-0.0013*** (-3.6734)
FAMFIRM	-0.0002 (-0.0821)	0.0010 (0.8763)	0.0007 (0.0036)	0.0014 (0.2426)	-0.0002 (-0.0821)
GOV	-0.0035 (-0.3944)	-0.0057 (-1.3732)	-0.0206 (-0.6994)	-0.0196 (-0.7362)	-0.0035 (-0.3944)
GOVINDEXT	-0.0029** (-2.5211)	-0.0052*** (-3.1133)	-0.0054*** (-5.9990)	-0.0040*** (-5.2779)	-0.0051*** (-4.7655)
Observations	844	832	844	844	844

(Continues)

TABLE 9 (Continued)

Variables	ABSDA1	ABSDA1	ABSDA1	ABSDA1	ABSDA1
Number of iden	120	120	120	120	120
<i>F</i> test	178.50***	370.40***	312.10***	511.20***	3,524.00***
AR(2)	1.027	1.196	1.159	1.053	1.033
Hansen test	105.200	107.500	109.000	107.100	111.100
Lind–Mehlum test	-	-	-	-	5.830***

Note: This table shows the regression estimates which explain the absolute discretionary accruals measured by ABSDA1 variable. All the variables are described in Section 3. Fisher-type test is used to contrast the joint significance of the independent variables. Second-order autocorrelation test (AR(2)) is used to test the null hypothesis that there is no serial correlation of the stochastic error. The Hansen contrast is used to test the hypothesis that the instruments are properly chosen. VIF contrast is used to test the existence multicollinearity problems. The Lind–Mehlum contrast is used to test the non-monotonic relationship between INSOWN variable and the dependent variable. Industry and time dummy variables are included in the models but not reported. Standard errors in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

discretionary power of the corporate sector to overstate the financial statements is reduced. These findings are also supported by the arguments that financial development is likely to heighten the monitoring and scrutiny of accounting figures because it involves strengthened investor protection laws and regulations and increases the number of sophisticated market participants (Enomoto, Kimura, & Yamaguchi, 2017). Hence, we can state that variables at the country level are also critical drivers of the managerial behavior, and consequently cannot be excluded from the analysis.

5 | CONCLUSIONS

This paper analyzes the impact of ownership structure and board features on the managerial discretionary behavior of a sample of Spanish companies. To the best of our knowledge, this is perhaps the first work in studying the relationship between this set of variables on the earnings management for the Spanish market.

More concentrated ownership structures behave as enhanced corporate governance systems which constrain the managerial discretion in overstating the financial reports and consequently in fooling investors. We found evidence of the existence of a non-monotonic inverse U-shaped relationship between the insider ownership and the earnings manipulation. When insider ownership increases, the earnings management increases too, but only up to the critical point. When insider ownership exceeds that threshold, then the managerial opportunistic behavior is constrained as a result of alignment of interests between managers and shareholders, and consequently, the earnings management drops. More concentrated ownership structures behave as enhanced corporate governance systems which constrain the managerial discretion in overstating the financial reports and consequently in fooling investors. We also found that institutional investors as external majority shareholders enhance corporate systems with their voting by influencing managers' value maximizing decisions that constrain the earnings manipulation.

Regarding the board composition, our results show that larger boards are better at preventing earnings management and also that larger proportion of female members reduces earnings management capacity of executives. Kyaw et al. (2015) show that Spain is one of the European countries with the lowest gender diversity. Therefore, it is recommended that policy measures lead to set minimum quotas of female board members in Spanish firms to enhance corporate governance and eventually reduce managerial opportunistic behavior.

While the board of directors are directly responsible for steering the company and supervising its management with the goal of promoting the corporate interest, we found evidence of some characteristics that are not aligned with this supervisory function. The good governance code of listed companies does not recommend CEO duality, as such duality increases the likelihood of opportunistic manipulation of financial reporting.

International accounting studies have traditionally included Spain within the group of French civil-law nations, characterized by having weak investor protection and enforcement regulations, and virtually nonexistent litigation risk for directors and auditors (La Porta et al., 1999, 2000). Although there has been an important evolution in the Spanish legal and financial systems (Saona & Vallelado, 2010), there is still work to be done with regard to reinforcing regulation and control of corruption that will have a positive impact in decreasing the ability of managers to manipulate earnings.

Therefore, we conclude that it is necessary for the Spanish government, institutions, and policy makers to develop policies that promote better internal and external governance systems. On the one hand, the enforcement of the law might eliminate opacity and information asymmetries, which eventually would decrease managers' discretionary power, while on the other hand, measures need to be taken in order to promote more efficient board discipline and reduce anomalies in their composition.

This work might be extended toward other European countries. We have focused our analysis on Spanish listed companies, but a possible future research line would be a comparative analysis of different European countries.

ENDNOTES

¹ Z-score is defined as $\text{Risk} = 1.2 X 1_{it} + 1.4 X 2_{it} + 3.3 X 3_{it} + 0.6 X 4_{it} + 0.99 X 5_{it}$, where $X1_{it}$ is working capital/total assets; $X2_{it}$ is the retained earnings/total assets; $X3_{it}$ is earnings before interest and tax/total assets; $X4_{it}$ is market value of equity/total liabilities; and $X5_{it}$ is sales/total assets.

² The critical value is calculated in two steps. First, by deriving the regression on the discretionary accruals as the dependent variable with respect to the insiders' ownership, and then equaling it to zero as $\frac{\partial \text{ABSDA}}{\partial \text{INSOWN}} = 0$. Second, we solve for INSOWN which represents the point at which the discretionary accruals are maximized. Specifically speaking, this solution takes the form: $\frac{\partial \text{ABSDA}}{\partial \text{INSOWN}} = 0.0165 - 2 \times (0.0161 \times \text{INSOWN}) = 0$. This critical value might be mathematically expressed as $-\beta_{\text{INSOWN}} / 2\beta_{\text{INSOWN}^2}$, where β_{INSOWN} and β_{INSOWN^2} are the parameter estimates of variables INSOWN and INSOWN^2 , respectively. Hence, in this example, when INSOWN reaches the threshold of 51.24%, the discretionary accruals are maximized. Idem calculations are done in the regressions where INSOWN and INSOWN^2 are statistically significant.

³ The results of Table 7 were replicated by using LOGINSOWN and its squared transformation as right-hand-side variable as robustness check. All the major findings remain qualitatively the same but are not reported for space-saving reasons. Nevertheless, they are available upon request to the corresponding author.

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