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ORIGINAL ARTICLE

The effectiveness of the audit committee in Spain: implications of its existence on the auditor's opinion

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Abstract This research work is aimed at determining the effectiveness of the Audit Committee (AC), analyzing its impact on the reliability of accounting information issued by spanish listed companies. With this aim, we study whether certain features such as its voluntary or otherwise compulsory formation, its independence and activity lead to an improvement of financial reporting quality, which is defined as the removal of avoidable qualifications in the audit report. We considered the periods where ACs were voluntary (1998–2002) and compulsory (2003 onwards). The results obtained suggest that: (a) compulsory ACs are more effective than voluntary ones; (b) ACs with a higher proportion of independent members do not lead to greater improvements in the quality of accounting information; and (c) the number of meetings of the AC is directly related to improvements in the quality of accounting information.

Keywords Auditing · Audit Committee · Corporate governance

JEL Classifcations M42 · G34

1 Introduction

Audit Committees (hereafter AC) appeared as a result of the irregularities detected in financial information provided by companies after bankruptcy cases or illegal actions

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and had the aim of guaranteeing transparency and control in large companies. As a result, during the 1970s a series of measures aimed at encouraging listed companies to set up an AC were implemented in the USA. As suggested by previous research, there is evidence pointing to the positive contribution of ACs to improvements in the quality of accounting information.

In Europe, however, large companies did not form ACs until the 1990s, after the publication of different codes of good corporative governance. Over time, different institutional and professional bodies have advocated the setting-up of ACs, especially in listed companies. It is usually recommended that ACs should be made up of non-executive or external directors and should be dominated by independent members.

In Spain, the Olivencia Code (1998), which is a "good practices" code which companies followed on a voluntary basis, classified the high proportion of qualified audit reports received by listed companies as anomalous and as a situation which had to be amended. The solution proposed was to set up ACs. The Code has had an enormous influence on the governance system of the Spanish companies, and in the immediate years after its issuance a significant proportion of large listed companies have adopted this recommendation to set up an AC. Furthermore, the Financial System Reform Law (2002), obliges listed companies to establish an AC since 2003.

The functions that both, the Olivencia Code and the Financial System Reform Law, assign to the AC lead to the conclusion that the AC facilitates the task of the external auditor as they both pursue mutual goals, namely ensuring the feasibility and efficacy of the internal control measures established by the company and guaranteeing that its accounting statements are formulated in accordance with Generally Accepted Accounting Principles (GAAP). Therefore, it is possible to evaluate the efficiency of the AC, that is, the degree of fulfillment of its functions by measuring its influence on the contents of the audit report.

If the AC is effective in facilitating the labour of the external auditor, then the auditor's opinion about the financial statements should be improved, evolving from a qualified opinion to a favourable one, or, in the case of maintaining a qualified opinion, producing certain modifications to the qualifications.

In this respect, it should be highlighted that, till January 1st, 2011, Spanish Auditing Standards regulate four types of qualifications or circumstances having an effect on the auditor's opinion: scope limitations, uncertainties, errors or non-compliance with GAAP, and changes in the accounting principles and policies applied which affect the inter-annual comparability of financial statements.[1]

These qualifications can be grouped into those that can be avoided by the audited company, a category comprising errors and non-compliance with GAAP and scope limitations imposed by the audited firm, and unavoidable qualifications (Teoh 1992),

[1] In its Resolution dated December 21, 2010, the Spanish Institute for Accounting and Auditing published an amendment to Sect. 3 of the Technical Auditing Standards. This amendment reduced the qualifications or circumstances which can affect the auditor's opinion to include only scope limitations and non-compliance with accounting principles and criteria. The uncertainties are no longer strictly classified as qualifications but they can lead to a disclaimer of opinion in extreme cases where multiple uncertainties may interact with a very significant combined effect on the annual accounts. The amendment in the Resolution is of mandatory application to audit reports issued after January 1st, 2011. Our sample period is prior to the Resolution, so we apply the original set of qualifications.

which are those attributable to the rest of scope limitations and uncertainties. Obviously, the AC can only have an effect on the first group of qualifications. An effective AC can exert pressure on the audited company to accept the adjustments proposed by the auditor when qualifications due to errors are detected, or to provide any additional information necessary to audit the firm's accounts. Thus, an effective AC should lead to the disappearance of those qualifications avoidable by the audited company and which cause the accounting information to be unreliable.

However, the existence of an AC should not have any effect on qualifications due to uncertainties, given that these originate in future events which are outside of the firm's control, are unavoidable, and will also be recurrent as long as the circumstances that give rise to them are not solved. Moreover, these types of uncertainties, as well as the scope limitations imposed by circumstance, do not influence the reliability of the accounting information issued by the audited company. They should be interpreted as warning remarks, that is, the information should be analyzed with caution since: (a) the company is exposed to potential risks whose effect depends on future (and therefore uncertain) events; or (b) some aspects could not be examined by the auditor due to causes which are not attributable to the audited firm.

The main aim of this study is to evaluate whether the AC has the expected effect of making avoidable qualifications disappear from the audit reports of Spanish listed firms. In order to test this hypothesis we have reviewed the audit reports of non-financial Spanish listed firms for the period 1998–2007. We have used univariate and multivariate techniques to test whether certain features or characteristics of the AC, such as its voluntary or otherwise compulsory formation, its independence and activity and some control variables associated with the audited company and the auditor have an effect on the AC's efficacy.

A large literature body has been devoted to analyzing the efficacy of ACs. The contribution of the present paper to the existing literature is twofold. The first is the way the effectiveness of the AC is measured, we define it as the ability of the AC to eradicate avoidable qualifications (those over which firms have decision-making capacity when it comes to drawing up its financial statements) in audit reports. The second and key contribution lies in the time period analyzed, which allows us to check whether there are differences between the control activity performed by the ACs set up voluntarily and those mandatorily created subsequent to legal requirement.

This latter aspect is of special interest in the Spanish context, for which previous research papers on the effectiveness of ACs have concluded that they do not lead to an improvement in the reliability of accounting information. However, most of these studies analyzed the period in which the ACs were set up voluntarily. The voluntary setting up of an AC does not necessarily imply that there was a genuine intention on the part of the company to create an effective control mechanism to prevent the manipulation of accounting information. Instead, such an AC might simply have been the product of a marketing campaign designed to improve the firm's public image. As such, it remains to be determined whether the effectiveness of the AC has been improved due to its compulsory nature and as a result of maturing corporate governance practices in Spain.

Our results show that after the passing of the law that forced Spanish listed firms to establish an AC these bodies have gained effectiveness but that their composition is not related to the degree of accomplishment of their mission. However, the number of meetings of the AC is directly related to improvements in the quality of accounting information.

The rest of the paper is structured as follows: Sect. 2 reviews the literature on the efficacy of the AC and motivates the tested hypotheses. Section 3 describes the sample, the variables and the methodologies used in the study. Results are presented in the Sect. 4. The Sect. 5 concludes.

2 Literature review and hypotheses

The essential role of ACs with regard to improving the transparency and quality of the financial information provided by companies has led many researchers to study these bodies. The majority of these studies, mainly of Anglo-Saxon origin, investigate the different factors which affect the efficacy of ACs and usually focus their analysis on listed companies. Different approaches have been used to study AC efficacy, including: (a) linking the ACs considered to be effective with certain corporate characteristics (Menon and Williams 1994; Collier and Gregory 1999; Deli and Gillan 2000; Klein 2002b); (b) determining the most important functions performed by the AC or what features should it have (Kalbers 1992; Kalbers and Fogarty 1993); (c) investigating the relation between the work of the AC and the auditor (Knapp 1987; Abbott and Parker 2000; Raghunandan 2001; Dezoort et al. 2003; (d) assessing whether the presence of an AC affects the reliability of financial reporting (Mcmullen 1996; Lin et al. 2006; Jaggi and Leung 2007) as well as the extent of voluntary information released by the company (Ho and Wong 2001 and (e) examining whether the specific characteristics of an AC affect its efficacy.

With regard to the last topic, which is also our subject of analysis, evidence has been found of a positive relationship between the AC's meeting frequency and the quality of a firm's accounting information (Archambeault and DeZoort 2001; Xie et al. 2003; Abbott et al. 2004; O'Sullivan et al. 2008; Ghosh et al. 2010; Li et al. 2002). Besides, previous research concludes that ACs whose members are independent, members of several boards of directors and who possess few company shares are more effective protecting the auditor's independence (Carcello and Neal 2003), there is also evidence of a positive market reaction to the appointment of a director with financial experience to its AC (Davidson et al. 2004).

The AC has also been the object of studies referring specifically to the Spanish case. Practically all these studies considered only the ACs of listed companies which had been set up on a voluntary basis. In general, this research focuses on the factors that have an effect on the efficacy of the AC. Thus, they examine whether certain corporate characteristics affect the independence of the AC, whether the specific characteristics of the AC influence the main functions assigned to the AC, whether its existence, composition and activity affect the quality of financial information, or whether the voluntary and compulsory setting-up of the AC causes effects on the Spanish stock market.

The results reveal that the presence of internal directors on the board is linked with ACs which are dependent on the management (Ruiz Barbadillo and Biedma López 2003). Moreover, prior research also evidences that there is a connection between the activity of the AC and the tasks carried out in relation to the financial information and the external audit, as well as a relation between the independent status of its members and the tasks they carry out with regard to the external audit (Rodríguez Gutiérrez 2006). However, other studies have not shown any connection between the quality of the financial information and the existence of an AC or with its structure and workings (Fuentes Barbera et al. 2005). Similarly, other studies have arrived at the conclusion that the presence of an independent AC does not affect the quality of accounting information (García Osma and Gill de Albornoz 2007) and that neither the existence nor the composition of the AC have an influence on the tendency to receive qualified opinions in the audit reports (Pucheta and De Fuentes 2007). Analysing the period during which it has been compulsory to set up ACs, a similar conclusion is reached that there is not a significant association between AC and earnings quality (Monterrey Mayoral et al. 2008). Finally, it has been shown that the market only reacts, and in a negative manner, to the voluntary setting-up of an AC (Cabal García et al. 2007).

As can clearly be seen, the majority of existing studies which examine AC efficacy have analyzed different factors which have an effect on the AC, with these factors being related to either the company or to the AC itself. However, few studies exist which try to check whether the AC is effective in carrying out its fundamental function, i.e., if the existence of an AC leads to an improvement in the reliability of the financial information of the company. In regard to this, previous studies have not found Spanish ACs to be as effective as their Anglo-Saxon counterparts. This could be a consequence of: (a) the peculiarities of the Spanish environment, such as the lower degree of protection offered to the investors which, together with less-developed capital markets, has resulted in a higher degree of share concentration (De Miguel et al. 2003; and (b) the differences in the rules regulating audit activity (Cabal García et al. 2007).

Furthermore, the studies carried out in Spain on AC efficacy mainly refer to the period before its setting was compulsory, i.e. before 2003. In the present study we try to redress this by examining the 10-year period between 1998 and 2007, which permits us to consider both voluntary and compulsory ACs. This will allow us to check whether some differences exist according to whether the AC was set up voluntarily by the company or because of a legal requirement, and whether their composition and activity affect their operational efficacy.

We have proxied the efficacy of the AC assessing its capacity to improve the reliability of the accounting information published by listed companies. We will consider that there has been an improvement in accounting information quality when qualifications which could have been avoided are corrected, i.e., the errors or noncompliance with GAAP and the scope limitations which companies imposed on their auditors.

To achieve our aims, the audit reports received by the non-financial companies listed at the Madrid stock exchange in the period 1998–2007 were reviewed. This period includes 5 years (1998–2002) in which the setting-up of an AC was left in the hands of the company. However, during the five remaining years of our sample period (2003–2007) it was compulsory for all the listed companies in Spain to have an AC. Therefore, it is relevant to analyse two aspects still not reviewed by Spanish previous research, namely: (1) whether there are differences between the effectiveness of ACs voluntarily set up and those set up by legal requirement;

and (2) whether the composition of the ACs and their activity affect their efficacy.

The form in which the AC has been created is a factor that can influence its efficacy. Specifically, with a voluntary setting-up there may be either a real commitment to AC tasks or else the creation of this body could be a mere "cosmetic" measure aimed at sending a positive message to the market.

In fact, previous evidence obtained for the Spanish case seems to support this latter view by highlighting the ineffectiveness of ACs which were set up during the voluntary period (Fuentes Barbera et al. 2005; García Osma and Gill de Albornoz 2007; Pucheta and De Fuentes 2007). However, companies that created their ACs after the enactment of the the Financial System Reform Law (2002) have been forced to comply with a series of requirements regarding the composition of the AC and the functions to be carried out. This series of conditions which were imposed by law should favour the effective performance of the AC, whereas during the voluntary setting-up period this would depend on the objective pursued by the company. This gives rise to the following hypothesis:

H1: The ACs set up under legal obligation are more effective than those set up voluntarily.

Furthermore, since 2003 listed companies have had to disclose certain information about the ACs. Prior to that, this information was not available. Hence, from 2003 onwards it is possible to identify the number of AC independent members. When the majority of the members of the AC are independents, management will find it more difficult to reject the amendments proposed by the auditor to correct the errors detected in the financial statements (Pucheta and De Fuentes 2007).

As a matter of fact, for firms experiencing financial distress, the greater the percentage of affiliated directors on the AC, the lower the probability the auditor will issue a going-concern report (Carcello and Neal 2000). Similarly, wholly independent ACs are significantly positively associated with a going-concern opinion and negatively associated with the likelihood of auditor dismissal following the issuance of a going-concern opinion (Bronson et al. 2009). ACs whose members are independent, are members of several boards of directors and who possess few company shares are more effective protecting the auditor's independence (Carcello and Neal 2003). Also, the presence of expert-independent directors in the AC enhances firm value (Chan and Li 2008) and is positively related to accruals quality (Dhaliwal et al. 2010). Further, earnings management decreases with the independence of the AC (Klein 2002a; Bédard et al. 2004; Agrawal and Chadha 2005; Karamanou and Vafeas 2005). Furthermore, it has been shown that independent ACs are positively related to the hiring of an auditor who is specialized in the company's sector (Abbott and Parker 2000) and with the reliability of the financial statements (Xie et al. 2003; Abbott et al. 2004; Anderson et al. 2004).

So, we pose the following hypothesis regarding the effect of AC independence on the AC's efficacy:

H2: The greater the ACs' independence from executives, the greater their efficacy will be.

Besides, the mere existence of an AC, even if it is independent from the executives, does not guarantee high quality financial reporting practices. Effective control is unlikely to occur in the case of inactive ACs. In accordance with this argument, the United Kingdom's Cadbury Report (1992), for example, recommends a minimum of two meetings per year, whilst Greece's Mertzanis Code (1999) suggests a minimum of two or three meetings per year. Recommendations of a minimum frequency of meetings to guarantee effective AC control are supported by the empirical evidence of a positive relationship between meeting frequency and the quality of a firm's accounting information (Archambeault and DeZoort 2001; Xie et al. 2003; Abbott et al. 2004; O'Sullivan et al. 2008; Ghosh et al. 2010; Li et al. 2002). In the same way, firms that incur in fraudulent reporting practices have fewer AC meetings (Beasley et al. 2000; Farber 2005). Consequently we test a final hypothesis:

H3: The more intense is the ACs' activity, the greater their efficacy will be.

3 Study design

3.1 Sample

As previously indicated, the main objective of this paper is to analyse the AC's impact on the reliability of accounting information issued by Spanish listed companies. With this aim, we study whether certain features such as its voluntary or otherwise compulsory formation, its independence and activity lead to an improvement of financial reporting quality, which is defined as the removal of avoidable qualifications in the audit report. To do so we have examined the audit reports corresponding to Spanish non-financial listed companies during the period 1998–2007, selecting those reports containing avoidable qualifications and analyzing, using a panel data approach, whether the characteristics of the AC have any influence on the evolution (persistence or disappearance) of such qualifications.

Table 1 shows the evolution of these qualified reports from 1998 to 2007.

It can be observed that the number of qualified audit reports due to errors and non-compliance with GAAP decreased, and especially after 2003 when ACs became

Table 1 Description of the sample of audit reports

Year	Qualified reports with avoidable qualifications	Favourable reports	Total	Number of avoidable qualifications
1998	17 (100 %)	–	17	20
1999	17 (70.83 %)	7 (29.17 %)	24	18
2000	20 (64.52 %)	11 (35.48 %)	31	21
2001	16 (47.06 %)	18 (52.94 %)	34	17
2002	11 (31.43 %)	24 (68.57 %)	35	16
2003	5 (16.67 %)	25 (83.33 %)	30	8
2004	4 (13.33 %)	26 (86.67 %)	30	5
2005	4 (12.90 %)	27 (87.1 %)	31	5
2006	3 (9.38 %)	29 (90.62 %)	32	6
2007	2 (11.76 %)	15 (88.24 %)	17	2

mandatory for all listed companies due to Spain's 2002 Financial System Reform Law. Thus, while there was a total of 92 avoidable qualifications in the period prior to 2003, from 2003 onwards there were only 26, a reduction of 72 %.

Given that our study analyzes the evolution of avoidable qualifications present in annual audit reports, observations corresponding to 1998 are only used as a base year and excluded from the final panel which is composed by 209 firm-year observations of 43 Spanish non financial listed companies.

3.2 Variables

The effectiveness of the AC is defined in terms of its influence on the evolution of the avoidable qualifications present in the audit reports. We have defined a dummy variable (PERSISTENCE) that is a proxy for AC effectiveness. This variable equals zero when the avoidable qualifications were corrected and disappeared from the audit report and one otherwise.

In order to test our hypotheses we used three variables: a dummy which signals the voluntary or compulsory formation of the AC; the composition of the AC; and the level of activity of the AC. Six additional control variables associated with auditor's and firm's features which might affect the evolution of the avoidable qualifications were also added to the regression model.

In order to test our first hypothesis, concerning the existence of differences in the effectiveness of the AC depending on whether they were set up voluntarily or under obligation we include a dummy variable (VOL) that takes the value one when the AC was voluntarily set up (i.e., before 2003), and zero otherwise. We expect that firms that set up their ACs after 2003 could take advantage of the previous experiences of companies that had formed their ACs voluntarily and may therefore implement more effective control mechanisms. As such, we expect to obtain a positive relationship between this variable and the dependent variable (PERSISTENCE).

As settled above, we proposed a second and third hypotheses, to be tested using the period when ACs are compulsory, where we analyze whether the composition of the AC and its activity have an influence on its efficacy. The independence of board members is considered to be a major factor in ensuring that an effective supervisory role is played by the board of directors and its delegated committees. The main corporate governance codes recommend that the majority, or even all AC members be independent and several studies have found evidence of a direct relationship between the independence of the AC and the efficacy of this control mechanism (Abbott and Parker 2000; Carcello and Neal 2003; Abbott et al. 2004; Anderson et al. 2004; Lin et al. 2006; Rodríguez Gutiérrez 2006; García Osma and Gill de Albornoz 2007; Pucheta and De Fuentes 2007; Monterrey Mayoral et al. 2008). Thus, we have included the AC's composition in our study and this variable has been measured using the percentage of independents (IND), executives (EXE) and large shareholders' representatives (DOM) present on the committee.

As previously discussed, the mere presence of an AC does not guarantee high quality financial reporting practices. Carcello et al. (2002) relate AC activity, proxied by the frequency of meetings, to greater vigilance of the financial reporting process.

Therefore, assuming that a more intense monitoring activity on the part of the ACs will increase the reliability of the financial information issued by firms, we expect a negative relationship between the AC's activity—proxied by its annual meeting frequency (MEETINGS)—and the dependent variable.

Regarding the characteristics of the auditor, we consider that both the size of the audit firm and the length of the audit contract could affect the evolution of the qualifications present in the audit report. Empirical evidence regarding the effect of audit firm size suggests that Big audit firms provide higher quality services given the need to sustain their reputation and the prestige associated with their trade name (DeAngelo 1981; Francis and Wilson 1988; Palmrose 1986; Teoh and Wong 1993). Therefore, if the auditor is a Big firm this should contribute to the correction of avoidable qualifications. However, 92 % of our sample companies have been audited by a Big firm. We have consequently narrowed our definition of audit firm size, using a dummy variable (LEAD) which indicates whether the company has been audited by the market leader, defined as the audit firm that has carried out the greatest amount of audits among the listed companies in each year of the period of study. In line with previous evidence regarding the effect of the size of the audit firm on the quality of financial information we would expect a negative relationship between this dummy variable and the dependent variable.

Also of relevance is the effect of the auditor tenure, that is, the length of the audit contract. Some authors consider that the longer the time the audit firm has been working for a company, the better its knowledge of the company and as a consequence this will enhance its capability to detect any discrepancy with GAAP or any possible errors in the formulation of annual accounting statements (Gallizo and D'Silva 1996; López Combarros 1996; Arruñada and Paz-Ares 1997; Cañibano Calvo and Castrillo Lara 1997; Ruiz Barbadillo et al. 2006). On the other hand, auditor tenure can lessen the auditor's impartiality given that a closer client-auditor relationship (Gonzalo Angulo 1995) and a higher degree of economic dependence on its client (DeAngelo 1981; Arruñada and Paz-Ares 1997) could lead the auditor to exclude from the report certain avoidable qualifications detected and not corrected by the client. Consequently, we can not anticipate the sign of the relationship between the auditor tenure or length of audit engagement (LAE) and the dependent variable.

With regard to the set of possible firm characteristics that may affect the auditor's opinion we considered firm's size (SIZE), its solvency and profitability, with these two factors being proxied by the firm's debt ratio (DEBT) and the gross return on investment (ROI) ratio, and the firm's ownership concentration.

On the effect of firm size (SIZE), some authors (e.g., Park and Shin 2004) suggest that large companies may be easier to audit. The reason is that large companies have easier access to financial resources and are thus less likely to suffer from financial distress. Therefore, their managers will be less prone to window-dressing accounting figures in order to avoid legal bankruptcy procedures, implying they are less likely to receive qualified audit reports. However, firm size could have two opposite effects on the content of the audit report, which leads to ambiguity in regard to the sign of the relationship between the firm's size and our dependent variable (PERSISTENCE). On the one hand, there is a direct relationship between firm size and complexity and the auditor's fees. The weight that a large firm can represent in the profit and loss account of an auditing firm provides large clients with power to influence the auditor's opinion about its financial statements (DeAngelo 1981; Deis and Giroux 1992). Under this point of view, the larger the client, the greater the propensity to reduce the qualifications, even in cases where they should remain in the audit report.

On the other hand, the more intense surveillance exerted by the public on large firms increases their risk of being prosecuted in the case of accounting fraud covered up by an auditor (Ruiz Barbadillo et al. 2006). In this situation, the potential loss of reputation could make the auditor more conservative, maintaining or even increasing the number of qualifications in the report.

The debt ratio (DEBT) is an indicator of the firm's financial health. When the value of this ratio indicates a high level of risk it may become necessary for the firm to present good performance indicators, which in turn could lead to accounting manipulation practices and consequently to the persistence of avoidable qualifications in the auditor's report. We therefore anticipate a positive relationship between the debt ratio and the dependent variable.

With regard to the gross return on investment (ROI), it should be highlighted that a large profitability ratio indicates a low level of insolvency risk. Therefore, firms with a low level of profitability may have incentives to manipulate accounting information to improve their solvency indicators. However, firms with abnormally high profitability may also have incentives to manipulate financial statements so as to reduce tax charges. Given these two opposite effects of profitability on the firm's propensity to manipulate accounts, the sign of the relationship between ROI and the dependent variable is an open issue.

The corporate governance structure may also have an influence on the attitude of the firm's managers with respect to the formulation of financial statements and therefore on the audit report. We therefore control for the possible effects of the firm's ownership structure on the audit report.

Regarding the firm's ownership concentration, large stockholders, unlike minority shareholders, may have incentives to supervise managerial actions as the increase in their wealth derived from their supervisory action may be higher than the direct supervisory costs incurred. There is evidence of the supervisory behaviour of large shareholders in the adoption of anti-acquisition amendments. Kaplan and Minton (1994), Kang and Shivdasani (1995) and Franks et al. (1996) found evidence of a positive influence of large shareholders on the probability of managerial turnover in poorly-performing firms. There is also evidence of moderation in managerial remuneration in firms that have large shareholders (Dyl 1988; Hambrick and Finckelstein 1995).

Given the incentives of large shareholders to supervise managerial actions and the fact that the large shareholders are often large corporations with supervisory experience, we expect them to contribute to improving accounting information quality. In this regard, Rajgopal et al. (2002) found evidence of a lower incidence of accounting information manipulation in firms that have institutional shareholders as part of their ownership structure. The reason is that they have better information than small investors and they are not focused on short-term result figures. In sum, large shareholders will reduce managerial capacity to manipulate accounting information and should reduce the incidence of qualifications due to errors or non-compliance with GAAP.

Table 2 Variables analyzed

Variable	Code	Definition[a]
Persistence of avoidable qualifications	PERSISTENCE	Dichotomous variable which equals zero if the avoidable qualifications disappear from 1 year to another and one otherwise
Audit Committee	VOL	H1: Equals zero if the AC was constituted due to legal mandate and one if it was formed on a voluntary basis
	IND	H2: Percentage of the AC members which are independent
	DOM	H2: Percentage of the AC members which are large shareholder's representatives
	EXE	H2: Percentage of the AC members which are executives
	MEETINGS	H3: Number of meetings per year of the AC
Audit firm size	LEAD	Dichotomous variable which equals one if the auditor is the market leader and zero otherwise
Length of audit engagement	LAE	Number of years that the auditor issued a report about the quality of the firm's financial statements
Firm size	SIZE	Natural logarithm of total assets
Debt ratio	DEBT	Debt to total assets ratio
Economic profitability	ROI	Gross Return on Investment (ROI)
Ownership concentration	BIGGER3	Percentage of the shares in the hands of the three largest shareholders

[a] Following the suggestions of one of the anonymous referees, SIZE, DEBT and ROI were included in the probit models in differential form. That is, we considered the difference between their value in the period where the qualifications first appeared and the period considered in the panel. However for the sake of clarity their straight (non differential) values are shown in the descriptive statistics table

Consequently, we expect a negative relationship between the degree of concentration of firm ownership—proxied by the ownership stake in the hands of the three largest shareholders (BIGGER3)—and the dependent variable.

Table 2 shows a summary of the variables considered, their definitions and their abbreviated form used in the remainder of the paper.

Some descriptive statistics of the variables used are presented in Table 3.

Closer examination of the dependent variable (PERSISTENCE) shows that in 23 % of the firm-year observations corresponding to companies that received qualified audit reports due to avoidable circumstances, the company persisted in its behaviour, leading to a subsequent qualified audit report.

Regarding the formation of ACs and their characteristics, 75 % of our sample corresponds to firm-years in which companies have an AC that was voluntarily formed. It can also be seen that for the 137 observations for which the details about the AC's composition and its meeting frequency were available,[2] the average AC met five times a year. Regarding their composition, 50 % of their members were independent, 39 % were representatives of large shareholders and 9 % were executive directors. These

[2] Although many listed companies formed ACs before 2003, details about their composition and activity were generally not available from their annual corporate reports before that year. Consequently, the composition and activity of ACs were documented for only 137 of the 209 observations corresponding to firms with an AC.

Table 3 Descriptive statistics

Variable	Obs	Mean	SD	Min	Max
PERSISTENCE	209	0.2392344	0.4276404	0	1
VOL	209	0.7511962	0.4333579	0	1
IND	137	0.5053575	0.2551771	0	1
DOM	137	0.3979274	0.2601259	0	1
EXE	137	0.0967151	0.1563578	0	0.6666667
MEETINGS	137	5.172932	3.013885	0	14
LEAD	209	0.4449761	0.4981563	0	1
LAE	209	8.23445	4.795587	1	18
SIZE	209	13.23298	1.727188	9.448097	18.22767
DEBT	209	0.5259599	0.209104	0.011743	1.308411
ROI	209	0.0215624	0.0514924	−0.3596249	0.1707515
BIGGER3	209	38.77657	25.16181	0.591	97.979

The sample used comprises 209 firm-year observations obtained from 43 non-financial companies listed on the Spanish Continuous Market over the period 1999–2007. Descriptive statistics—mean, standard deviation, minimum and maximum—are computed for the set of variables included in the models

figures are very similar to those provided by Ruiz Barbadillo et al. (2007) for the Spanish market and show that, in accordance with most codes of good governance, our sample firms form their ACs mostly from external directors, the majority of which are independent.

The variables LAE and LEAD show that the average length of the audit contract for the sample firms is 8.23 years and that 44 % of the annual accounts have been audited by the market leader.

Regarding our set of control variables, the average book value of the total assets of our sample firms is 3,204,540 thousand Euro, and 52 % of these assets were financed with debt. The average company in our sample generated a 2.15 % return on investment, a figure that seems to be fairly low compared to the mean value of the risk-free rate for the period in the Spanish market. Finally, the three largest shareholders account for 38.77 % of equity on average. This figure is slightly lower than those reported by De Miguel et al. (2004) or García-Teruel and Martínez-Solano (2010) for the Spanish market, but it is still representative of the highly concentrated ownership structure of the Spanish market.

Pearson coefficients of correlation are shown in Table 4. The correlations between the dependent variable (PERSISTENCE), representing the maintenance or correction of avoidable qualifications, and the set of independent variables shed some light on our hypotheses. Regarding our first hypothesis, the variable VOL indicating the voluntary formation of the AC is negatively correlated with our dependent variable. This result is contrary to our first hypothesis and appears to indicate that, rather than being a cosmetic measure, the voluntarily formed AC contributes to the improvement of the reliability of financial statements. Contrary to our second and third hypothesis, we have not found any significant correlation between the variables that represent the AC's composition or activity and our dependent variable.

Table 4 Correlation matrix

	PERSISTENCE	VOL	IND	DOM	EXE	MEETINGS	LAE	LEAD	SIZE	DEBT	ROI	BIGGER3
PERSISTENCE	1											
	(0.0000)											
VOL	−0.2442	1										
	(0.0004)	(0.0000)										
IND	0.0002	0.201	1									
	(0.9981)	(0.0185)	(0.0000)									
DOM	0.0476	−0.1839	−0.816	1								
	(0.5808)	(0.0314)	(0.0000)	(0.0000)								
EXE	−0.0795	−0.022	−0.2744	−0.3319	1							
	(0.3557)	(0.7983)	(0.0012)	(0.0001)	(0.0000)							
MEETINGS	−0.0853	0.4093	−0.0091	0.1282	−0.1987	1						
	(0.3289)	(0.0000)	(0.9173)	(0.1428)	(0.0223)	(0.0000)						
LAE	−0.1171	0.2225	0.1891	−0.1868	0.0022	0.2512	1					
	(0.0912)	(0.0012)	(0.0269)	(0.0288)	(0.9793)	(0.0035)	(0.0000)					
LEAD	0.0682	0.0699	0.0876	0.1405	−0.3767	0.1994	0.2922	1				
	(0.3267)	(0.3146)	(0.3088)	(0.1015)	(0.0000)	(0.0214)	(0.0000)	(0.0000)				
SIZE	0.0216	−0.0536	−0.158	0.1167	0.0636	0.1105	0.2661	0.0811	1			
	(0.7559)	(0.441)	(0.0653)	(0.1744)	(0.4601)	(0.2055)	(0.0001)	(0.2431)	(0.0000)			
DEBT	0.0319	0.2071	−0.1896	0.1202	0.1095	0.1716	0.1296	0.1274	0.2209	1		
	(0.6468)	(0.0026)	(0.0265)	(0.1617)	(0.2029)	(0.0483)	(0.0614)	(0.0659)	(0.0013)	(0.0000)		
ROI	−0.1057	0.0543	−0.0092	−0.0549	0.1064	−0.1791	0.0513	−0.0419	−0.2466	−0.1057	1	
	(0.1277)	(0.4345)	(0.9149)	(0.524)	(0.216)	(0.0391)	(0.4607)	(0.5465)	(0.0003)	(0.1278)	(0.0000)	
BIGGER3	0.0063	0.0612	−0.0204	−0.0348	0.0911	0.132	0.1158	−0.0608	0.2285	0.1816	0.104	1
	(0.9284)	(0.3785)	(0.813)	(0.6867)	(0.2896)	(0.1298)	(0.0949)	(0.3822)	(0.0009)	(0.0085)	(0.1342)	(0.0000)

p values in parenthesis

4 Results

We now report the main results from the estimations of the different random-effects probit models for panel data used to determine if the voluntary or compulsory formation of the AC, its composition and the frequency with which it meets have an effect on the reliability of accounting information issued by Spanish non-financial listed companies.

Table 5 shows the results of the assessment of H1. This hypothesis postulates that ACs set up under legal obligation are more effective than those set up voluntarily. As indicated above, the proxy we used to measure the improvement in reliability (the dependent variable in the regression equation) is the disappearance of the avoidable qualifications in the audit report. The covariates we included were the dummy indicating whether the AC was established on a voluntary basis (VOL), another dummy indicating whether the company was audited by the market leader, the length of the audit engagement, and the increases (since the year the avoidable qualification appeared) in size, indebtedness, profitability and the percentage of the shares owned by the three main shareholders.

First of all, it should be noted that the analysis of the ρ-statistic reveals that the panel-level variance is significant. Therefore, the use of a panel data approach is justified. Our analysis also suggests that H1 holds, as the coefficient of VOL is positive and significantly different from zero. Therefore, the persistence of avoidable qualifications

Table 5 Assessment of hypothesis H1

Dependent Variable: PERSISTENCE	Coefficient (SE)	*Z* statistic (*p* value)
VOL	2.969282 (1.359725)	2.18 (0.029)
LEAD	−1.942822 (0.9161279)	−2.12 (0.034)
LAE	−0.1765222 (0.0966931)	−1.83 (0.068)
SIZE	−0.7978635 (0.4636921)	−1.72 (0.085)
DEBT	−1.577956 (1.765284)	−0.89 (0.371)
ROI	6.60114 (8.865216)	0.74 (0.457)
BIGGER3	−0.0233571 (0.0134936)	−1.73 (0.083)
Intercept term	−0.7167489 (1.167854)	−0.61 (0.539)
Log likelihood	−83.410024	
Wald $\chi 2$	13.86 ($p = 0.0538$)	
ρ	0.708953 (SE = 0.1289022)	
Likelihood-ratio test of $\rho = 0$	$\chi^2 = 30.31$ ($p = 0.000$)	

The estimations have been carried out on a sample of 209 observations on 43 non-financial companies listed on the Spanish Continuous Market over the period 1999–2007. Random effects Probit panel-data estimations have been used. The STATA 10.1 software package has been used. The dependent variable is a dichotomous variable which equals zero if the avoidable qualifications disappear from one year to another and one otherwise. The independent variables are AC, which captures the existence of an AC, and VOL, which indicates the voluntary formation of the AC. The control variables are LEAD, a dichotomous variable which equals one if the auditor is the market leader and zero otherwise; LAE, the number of years that the auditor issued a report about the quality of firm's financial statements; SIZE, the natural logarithm of the total assets; DEBT, the debt to total assets ratio; ROI, the Gross Return on Investment; and BIGGER3, the percentage of the shares in the hands of the three largest shareholders decreases in firms which have an AC formed under legal requirement. This finding suggests that firms that voluntarily established an AC were more interested in sending a positive message to the markets than in creating an effective tool for improving the quality of financial information.

The influence of some of the control variables in improving the quality of accounting information is also significant. Specifically, the increase in size, the type of auditor (leader or not), the auditor tenure and the presence of large shareholders exert a significant and positive influence on the disappearance of avoidable qualifications. This is also in accordance with the findings of previous studies on Anglo-Saxon companies, such as Menon and Williams (1994), Deli and Gillan (2000) and Klein (2002a) for the case of size, and Collier and Gregory (1999) for the case of the type of auditor. Some of these studies (Deli and Gillan 2000; Collier and Gregory 1999) found that the effect of firm leverage is significant, whereas we do not find such an effect.

Table 6 shows the results of the assessment of H2 and H3.

In order to test H2 we take account of the three types of members of an AC: independent, *dominical* (Spanish term for large shareholder's representative) and executive. We estimated three regression equations where the dependent variable is the improvement in the quality of accounting information and the independent variables are, respectively, the proportion of independent, *dominical* and executive members of the AC. In each of the three models we included as additional covariates the number of meetings of the AC, the length of the audit engagement, a dummy indicating whether the company was audited by the leading firm, and the increase in size, indebtedness, profitability and the proportion of shares owned by the three biggest shareholders.

First, as with the other model the panel-level variance is significant. The regression results suggest that the proportions of independent, *dominical,* or executive members do not seem to have any effect on the effectiveness of the AC, so that H2 does not hold. However, our analysis indicates that H3 holds, because the number of meetings of the AC significantly and positively influences the quality of the financial statements. Furthermore, with the exception of the length of the audit engagement and the presence of large shareholders, the remaining control variables do not seem to exert a significant influence on the quality of accounting information.

5 Summary and conclusions

The essential role attributed to the AC is the improvement of the transparency and quality of the financial information provided by a company. Because of this, one of its missions is to give support to the external auditor. Therefore, if the AC is an effective body, avoidable qualifications in the audit report should disappear.

The importance of this representative body of the board has led many authors to conduct research on its effectiveness. Although different approaches have been used, the majority of studies have tried to determine the influence of specific features of the firm or the AC on the effectiveness of this body. However, research papers which try to prove the existence of a link between the AC and a greater reliability of financial information are still scarce.

Table 6 Assessment of hypothesis H2 and H3

Dependent variable:	Independent member (IND)		Dominical member (DOM)		Executive member (EXE)	
PERSISTENCE	Coefficient (SE)	Z statistic (p value)	Coefficient (SE)	Z statistic (p value)	Coefficient (SE)	Z statistic (p value)
% of AC members of the considered type (IND/EXE/DOM)	−0.143989 (4.893058)	−0.03 (0.977)	−1.577995 (4.438957)	−0.36 (0.722)	2.945406 (6.395272)	0.46 (0.645)
MEETINGS	−1.695608 (0.515308)	−3.29 (0.001)	−1.689847 (0.464622)	−3.64 (0.000)	−1.821995 (0.455198)	−4.00 (0.000)
LAE	0.684306 (0.357436)	1.91 (0.056)	0.692645 (0.354730)	1.95 (0.051)	0.794772 (0.362605)	2.19 (0.028)
LEAD	−1.497323 (3.246828)	−0.46 (0.645)	−1.149871 (3.199966)	−0.36 (0.719)	−0.990992 (3.135445)	−0.32 (0.752)
BIGGER3	−0.122650 (0.055007)	−2.23 (0.026)	−0.124070 (0.053999)	−2.30 (0.022)	−0.135206 (0.055782)	−2.42 (0.015)
SIZE	−1.574660 (1.364138)	−1.15 (0.248)	−1.596523 (1.309526)	−1.22 (0.223)	−1.643555 (1.302836)	−1.26 (0.207)
DEBT	−6.039876 (6.339437)	−0.95 (0.341)	−5.269865 (6.334295)	−0.83 (0.405)	−5.061579 (6.464381)	−0.78 (0.434)
ROI	37.272110 (27.60759)	1.35 (0.177)	37.06271 (25.79801)	1.44 0.151	41.50199 (25.32698)	1.64 (0.101)
Intercept term	−6.45905 (3.503229)	−1.84 (0.065)	−5.628844 (3.355542)	−1.68 (0.093)	−7.610758 (4.206707)	−1.81 (0.070)
Log likelihood	−31.965669		−31.952995		−31.827802	
Wald $\chi 2$	23.61 ($p = 0.0027$)		29.50 ($p = 0.0003$)		37.31 ($p = 0.0000$)	
ρ	0.9823668 (SE = 0.0081465)		0.9813462 (SE = 0.0085172)		0.9838304 (SE = 0.0071568)	
Likelihood-ratio test of $\rho = 0$	$\chi^2 = 20.50$ ($p = 0.000$)		$\chi^2 = 20.43$ ($p = 0.000$)		$\chi^2 = 20.64$ ($p = 0.000$)	

The estimations have been carried out on a sample of 137 observations on 43 non-financial companies listed on the Spanish Continuous Market over the period 2003–2007. Random effects Probit panel-data estimations have been used. The STATA 10.1 software package has been used. The dependent variable is a dichotomous variable which equals zero if the avoidable qualifications disappear from one year to another and one otherwise. The independent variables are IND, DOM and EXE, which capture the percentage of independent, "dominical" and executive members of the AC. The set of control variables includes MEETINGS, which indicates the frequency with which the AC meets; LEAD, a dichotomous variable which equals one if the auditor is the market leader and zero otherwise; LAE, the number of years that the auditor issued a report about the quality of firm's financial statements; SIZE, the natural logarithm of the total assets; DEBT, the Debt to total assets ratio; ROI, the Gross Return on Investment; and BIGGER3, the percentage of the shares in the hands of the three largest shareholders

In this regard, some studies using data from Anglo-Saxon companies suggest that the AC is in general an effective body. On the other hand, studies conducted for Spanish firms have not been able to determine its effectiveness. These studies considered only the period where the AC was a voluntary body and the inefficacy of Spanish ACs was mainly attributed to the specific features of the Spanish stock market and Spanish regulatory rules. However, due to a legal act passed in 2002, from 2003 onwards all Spanish listed companies must have an AC. This raises the possibility that the efficacy of Spanish ACs could be more similar at present to that of their Anglo-Saxon counterparts.

The objective of our research work is to determine whether ACs of Spanish listed firms are effective in improving the quality of financial statements. We considered the periods where ACs were voluntary (prior to 2003) and compulsory (2003 onwards). The proxy we used to measure the improvement in the quality of accounting information was the disappearance of avoidable qualifications in the audit report.

We carried out three analyses. The first was aimed at determining whether ACs formed in the period when they were compulsory contribute more to improving the quality of financial information than those set up on a voluntary basis. We hypothesized that ACs set up under obligation are more effective because: (a) Spanish Law establishes that these must meet certain requirements which should make them more useful tools; and (b) voluntary ACs could be "cosmetic" tools which are not formed with the real aim of issuing higher quality accounting information. Our results indicate that this hypothesis holds, as compulsory ACs are associated with greater improvements in the quality of financial information.

The second analysis consisted of determining whether the composition of the AC has an influence on its efficacy. Some previous studies suggested that ACs with a higher proportion of independent members lead to greater improvements in the quality of accounting information. Our results do not support this hypothesis.

Our third analysis tried to determine if ACs' activity significantly affects to their efficacy. We conclude that the frequency of AC meetings is directly related to improvements in the quality of accounting information. This result is coherent with those obtained previously by Archambeault and DeZoort (2001), Xie et al. (2003), Abbott et al. (2004), O'Sullivan et al. (2008), Ghosh et al. (2010) and Li et al. (2002) and supports the recommendations of a minimum annual meeting frequency requirement proposed in different codes of good governance.

In summary, our results show that after the law that forced Spanish listed firms to establish an AC was passed these bodies have gained effectiveness, that the more active ACs are also more effective although their composition is not related with the extent to which their mission is accomplished. Therefore, it seems that the formation of ACs dominated by independent members, as recommended in most codes of good governance, is not a sufficient safeguard of the reliability of financial information issued by Spanish listed companies. If independent AC members are expected to curb managerial self-interested actions in the issuance of financial information, these AC members should be in a powerful position, both in terms of independence from the managerial team and in terms of knowledge and skills to accomplish such task. Consequently, steps should be taken to ensure that the procedure employed to select the independent AC members does not weaken their independence and that they do not lack the specific skills necessary to perform an auditory task.

A future avenue of research would be to determine whether Spanish ACs that meet the more restrictive requirements about the ACs' structure and independence included in Anglo-Saxon regulations (i.e. in the USA and the UK all AC members must be independent) are more effective than those which only meet the minimum requirements of the Spanish Law, which allow executives and outside non independent directors to have a seat at the AC.

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