



# The impact of audit committee existence and external audit on earnings management Evidence from Portugal

Audit committee  
existence and  
external audit

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## Abstract

**Purpose** – This study aims to examine the combined effect of audit committee existence and external audit on earnings management.

**Design/methodology/approach** – The paper uses ordinary least squares regression model to examine the effect of audit committee existence, external audit and the interaction between these two monitoring mechanisms on earnings management for a sample of 33 non-financial listed Portuguese firms-year from 2003 to 2009.

**Findings** – In contrast to results of most previous studies, which assume that audit committees and external auditor act independently from one another, the paper finds a positive relationship between both audit committee existence and external audit and discretionary accruals. However, this study suggests that the existence of an audit committee and external auditor jointly reduces earnings management.

**Practical implications** – The findings based on this study provide useful information for regulators in countries with an institutional environment similar to that of Portugal. In addition, the results also provide useful information to investors in evaluating the impact of audit committee existence and external audit on earnings quality, especially under concentrated ownership.

**Originality/value** – The major contribution of the current study is that in contrast to previous studies, which have implicitly assumed that audit committees and external auditors act independently from one another, this study also examines the combined effects of audit committee existence and external auditors on earnings management. In addition, this paper is the first empirical study to investigate the effect of audit committee existence and external audit on earnings management in Portugal.

**Keywords** Earnings management, Audit committee, Discretionary accruals, External audit

**Paper type** Research paper

## 1. Introduction

Since the publication of two key research papers by Ball and Brown (1968) and Beaver (1968), it is widely believed that accounting earnings information provide relevant and useful information to investors and other decision markets. As suggested by IASB Framework for the Preparation and Presentation of Financial Statements, the objective of financial statements is to provide information regarding the financial position, performance and changes in financial position of an entity that is useful to a wide range of users to make economic decisions.

**JEL classification** – M410, G32, G34



Management is responsible for providing stakeholders with information regarding various entity activities, which can be achieved through financial reporting (Baker and Al-Thuneibat, 2011). However, the inherent flexibility in many accounting standards facilitates managers to take advantage of it and misrepresent information. As a result, a key element of the financial reporting process is to guarantee an independent verification of the financial statements prepared by the firm's management (Chan *et al.*, 1993). It is widely known that audit committees and external auditors play a central role in ensuring the integrity of financial reporting process (Cohen *et al.*, 2004; Johl *et al.*, 2007; Vafeas, 2005). Previous studies showed that higher audit quality (external audit) and audit committee are associated with higher earnings quality (Balsam *et al.*, 2003; Becker *et al.*, 1998; Francis *et al.*, 1999).

Agency theory suggests that the monitoring mechanisms are supposed to align interests of both managers and shareholders and mitigate the conflict of interests and any opportunistic behaviour resulting from it. In this sense, Jensen and Meckling (1976, p. 323) characterise the auditing function as an important bonding mechanism in firms which "serve[s] to more closely identify the manager's interests with those of the outside equity holders". Arens *et al.* (2010) and Messier *et al.* (2007) also suggest that the audit function serves to reduce information asymmetry and conflicts of interest that exist between managers and shareholders.

Therefore, the auditing process is supposed to serve as a monitoring device (Chan *et al.*, 1993) that will reduce managers' incentives to manipulate reported earnings. For example, Becker *et al.* (1998) examine the relationship between auditor quality and earnings management, and find that the clients firms of the Big Six auditors (now Big Four) use less discretionary accruals than the clients of other auditors. Benkel *et al.* (2006) and Saleh *et al.* (2007) find evidence that audit committee is associated with a reduced level of discretionary accruals.

However, the concern about the quality of accounting numbers and its relation with the quality of the auditing process is increasing over time following the collapse of some firms as a result of accounting manipulation by managers. In fact, regulators and investors often criticise both audit committees and external auditors about doing a poor job because the audited financial statements have been proved to be false and misleading in many of recent accounting scandals. Therefore, whether audit committee and external audit lead to lower earnings management remains an open issue. Given these concerns, it is important to investigate the association of audit committees and external audit with earnings management, which could potentially affect the integrity of financial reporting.

Therefore, in this study, we examine the effect of audit committee existence and external audit on earnings management. Additionally, as the audit committee selects the external auditor and the external auditor report to audit committee, it is likely that these two mechanisms operate jointly to mitigate earnings management. Consequently, we also examine the joint association between earnings management and the two monitoring mechanisms. In contrast to results of previous studies, which assume that audit committees and external auditor act independently from one another, we find a positive relationship between both audit committee and external audit and discretionary accruals for a sample of 33 non-financial listed Portuguese firms-year from 2003 to 2009. However, the joint association between earnings management and the two mechanisms suggest that the audit committee and external auditor jointly reduce earnings management.

The study makes some contributions to the existing literature. The study contributes to the literature by extending the research into the effects of audit committee and external audit on portfolio firms' earnings management beyond the US and the UK environments (Becker *et al.*, 1998; Chang and Sun, 2009; Chi *et al.*, 2011; Ebrahim, 2007; Francis *et al.*, 1999; Gore *et al.*, 2001; Krishnan, 2003; Lin *et al.*, 2006). Additionally, in contrast to previous studies, which have implicitly assumed that audit committees and external auditors act independently from one another (Becker *et al.*, 1998; Chen *et al.*, 2005; Chi *et al.*, 2011; Chiang *et al.*, 2011; Chtourou *et al.*, 2001; Klein, 2002; Peasnell *et al.*, 2000, 2005; Piot and Janin, 2007; Tendeloo and Vanstraelen, 2008; You *et al.*, 2003), this study also examines the combined effects of audit committee and external auditors on earnings management. Furthermore, this paper represents the first known study examining the association between both audit committee and external audit and accruals management in Portugal. In addition, the Portuguese capital markets (Euronext Lisbon) present a unique case in the study of auditing, because the ownership in Portuguese listed firms is highly concentrated, in contrast with the ownership in the US and in the UK listed firms, which is widely diffused (Shleifer and Vishny, 1997).

Finally, our findings can provide useful information for both regulators and shareholders, mainly whether the audit committee and external audit mitigate earnings management and enhance earnings quality, especially in firms with highly concentrated equity ownership.

This paper is structured as follows. In Section 2, we give a brief overview of the Portuguese Securities Market Supervisory Authority (Comissão de Mercado de Valores Mobiliários, henceforth "CMVM", the Portuguese equivalent to the Securities and Exchange Commission (SEC)) recommendations for audit committees and external audit (CMVM, 2001). Section 3 reviews previous literature and develops testable hypotheses. Section 4 describes the variables measurement and research design. The sample selection process and characteristics of the sample are presented in Section 5, while Section 6 reports the main results. We provide sensitivity tests in Section 7. Finally, Section 8 summarises and concludes this study.

## 2. CMVM recommendations for audit committees and external audit

Portugal has placed an emphasis on corporate governance procedures for a number of years. The significant governance initiative may date back to October 1999, when the CMVM issued a set of 17 voluntary corporate governance best practices (CMVM Regulation No., 7). These recommendations, which have been revised and updated regularly (CMVM Regulation, 11/2003, CMVM Regulation, 10/2005 and CMVM Regulation 3/2006) were classified by CMVM into five distinct groups:

- (1) disclosure of information;
- (2) voting and shareholder representation;
- (3) adoption of certain society rules;
- (4) structure and functioning of the board of directors; and
- (5) institutional investors (Alves and Mendes, 2001).

One of the recommendations within the fourth group establishes that the board of directors should create internal audit committees, with the power to assess the corporate structure and its governance.

In September of 2007, the CMVM issued an improved version of these set of recommendations, which is now known as “CMVM Corporate Governance Code”. With respect to audit committees, the main recommendations of the “CMVM Corporate Governance Code” are:

- the annual report on the activity carried out by the audit committee shall include a description of the supervisory activity and shall mention any restraints that they may have come up against;
- the audit committee shall represent the company for all purposes at the external auditor, and shall propose the services supplier, the respective remuneration, ensure that adequate conditions for the supply of these services are in place within the company, as well as being the liaison officer between the company and the first recipient of the reports; and
- the audit committee, shall assess the external auditor on an annual basis and advise the general meeting that he/she be discharged whenever justifiable grounds are present (CMVM, 2007).

The Portuguese Institute of Corporate Governance in its White Book also does some recommendations for audit committees. The main recommendations are:

- the majority of the members of the audit committee shall be independent;
- the chairman of the audit committee shall be independent;
- the audit committee shall include at least one member of recognized competence and reputation in the financial, accounting an auditing areas and one member with operating knowledge on the company’s main business;
- the audit committee shall define the scope and depth of external auditing services, including the approval of action plans and activity programs;
- the auditing committee shall be the interlocutor of the company with the external auditor and the first recipient of its audit reports;
- the audit committee shall promote the articulation and comparison between internal and external auditing report; and
- the audit committee shall disclose, in the report of the board of directors, all the economic relations of the company with the external auditor, detailing all the amounts paid and separating auditing from non-auditing services.

External audit plays a vital role in lending independent credibility to published financial statements used by stakeholders as a basis for making capital allocation decisions. The financial statements and the director’s report of Portuguese listed companies must be audited by a CMVM registered external auditor as well as a statutory auditor.

Auditors’ independent opinion increases the reliability of the financial statements. The Portuguese audit standards are in conformity with the International Standards Auditing (ISA) and the professional association of auditors has a system of quality control based on wide review monitored by a specialized commission. According to CMVM, auditors’ work must be also submitted to a quality assurance system in compliance with the recommendation emitted by the European Commission.

In addition, CMVM Regulation 11/2003 recommends that listed companies present an annual report on their corporate governance, including the description of non-audit

services provided by their auditor, the price paid for it, the relationship between the amounts paid for such services and the overall total amounts paid by the company to the auditor, and the description of the safeguard measures adopted to ensure the auditor's independence.

According to Portuguese securities code, external auditors are liable for damages caused to the audited companies or third parties due to errors in the report or statement of opinion, and statutory auditors and other persons that signed the report or statement of opinion are also liability-bound.

Summing up, these recommendations suggest that CMVM regulator concur mainly that audit committees existence and external audit are an important component of effective accountability and governance. Therefore, CMVM regulator appears to believe that audit committee existence and external audit will lead to lower earnings management, and hence, higher quality financial reporting.

### 3. Literature review and testable hypotheses

The role of the corporate governance structure in financial reporting is to ensure compliance with financial accounting system and to maintain the credibility of financial statements (Bushman and Smith, 2003).

Auditing, as a monitoring mechanism, reduces information asymmetry between managers and the market, providing more credibility to the firm's financial statements (Becker *et al.*, 1998) and thus is a valuable method of monitoring used by firms to reduce agency costs (Jensen and Meckling, 1976; Watts and Zimmerman, 1983).

The elementary functions of the audit committee are to oversee the financial reporting process and to monitor manager's propensities to manipulate earnings. The main role of external auditors is to express an opinion on whether an entity's financial statements are free of material misstatements. Consequently, audit committees and external auditors perform to ascertain the validity and reliability of the reported earnings.

So, as monitors of the firm's financial reporting, audit committees and auditors are expected to provide effective monitoring of earnings management.

#### 3.1 Audit committee existence and earnings management

The CMVM's regulation recommends that the board of directors should create internal audit committees with the power to assess the corporate structure and its governance. The audit committee is a sub-committee of the board of directors that provides a formal communication between the board, the internal monitoring system, and the external auditor. In fact, the audit committee provides oversight functions of the management in respect to auditing, financial reporting, internal control and risk management in organisations and thereby it is expected to protect the interests of the shareholders.

The audit committee serves many important corporate governance functions and provides advice on operational and regulatory matters (Menon and Williams, 1994). Literature on audit committees suggests that the roles of regulatory and controlling authorities are mainly important in improving the market value of the firm (Agrawal and Knoeber, 1996; Bhagat and Jefferis, 2002; Dalton *et al.*, 1998; Klein, 1998). The audit committee is also viewed as a monitoring mechanism that can help alleviate agency problems by reducing information asymmetry between insiders (managers) and outsiders board members (Chen *et al.*, 2008; Dey, 2008; Eichenseher and Shields, 1985; Klein, 1998; Sarens *et al.*, 2009), since its key functions are to review financial information

and control management's conduct of affairs (Alchian and Demsetz, 1972; Fama and Jensen, 1983).

Besides, an audit committee is as a delegate body of the board of directors charged with safeguarding and advancing the interests of shareholders (Bédard *et al.*, 2004; Klein, 2002). The board usually delegates responsibility for the oversight of financial reporting to the audit committee to enhance the breadth of relevance and reliability of the annual report. Therefore, the audit committee has been considered as a very important monitoring mechanism of corporate governance for oversight of the company's financial reporting process (SEC, 2003; Joshi and Wakil, 2004). In fact, the audit committee can improve the quality and accuracy of financial information (DeFond and Jiambalvo, 1991; McMullen, 1996), ensuring that the officers responsible for reporting and disclosure are more closely monitored and controlled. Therefore, as a part of the corporate governance mechanism, audit committees can play a key role in constraining earnings management and enhancing earnings quality.

Several research studies have found that audit committees play a direct role in controlling earnings management. In the US market, for example, DeFond and Jiambalvo (1991) find that the overstatement of earnings is less likely among firms with audit committees. Dechow *et al.* (1996) investigate firms subject to accounting enforcement actions by the SEC for alleged violations of generally accepted accounting principles. They conclude that firms manipulating earnings are less likely to have an audit committee. Wild (1996) studies if the formation of the audit committee enhances earnings quality. The empirical tests focus on market participants' reactions to earnings reports before and after the formation of the audit committee. The result indicates a significant increase in the market's reaction to earnings reports subsequent to the formation of the committee. Similarly, Baxter and Cotter (2009) document that the formation of an audit committee reduces intentional earnings management, for a sample of Australian listed companies. Using French data, Piot and Janin (2007) document that the presence of an audit committee reduces earnings management. In contrast, for example, in the UK, Peasnell *et al.* (2005) find no evidence that the presence of an audit committee directly affects the extent of income-increasing manipulations to meet or exceed earnings management thresholds. He *et al.* (2007) also find no evidence that the existence of an audit committee is associated with the level of discretionary accruals for a sample of Australian companies.

Taken together, previous studies suggest that the existence of an audit committee may have an impact on earnings management.

As referred previously, the CMVM's regulation recommends that the board of directors should create internal audit committees. Therefore, our first hypothesis is the following:

*H1.* The existence of an audit committee is negatively related to earnings management.

### *3.2 External audit and earnings management*

Auditing provides assurance about the quality and credibility of the company's financial information. Auditors provide two valuable roles to capital market participants: an information role and an insurance role (Hakim and Omri, 2010). Because auditors provide independent verification of manager prepared financial statements, auditor quality contributes to the credibility of financial information. Thus, the effectiveness of auditing,

i.e. its ability to constrain earnings management, varies with the quality of the external auditors (Becker *et al.*, 1998). Audit quality is conditional on the auditor's competence and the auditor's independence (Ahadiat, 2011; Watts and Zimmerman, 1986).

Audit quality research has focused primarily on differences between big firm auditors and non-big firm auditors. The underlying rationale is that larger audit firms have greater incentives to detect and reveal management misreporting because partners can be more effectively monitored in larger audit firms (Watts and Zimmerman, 1981), and they have more to lose when an audit failure occurs (Bauwhede *et al.*, 2003). As a result, to protect their reputations and to avoid legal liability (Behn *et al.*, 1997), the big firm auditors will be more conservative and will restrain clients from using discretionary accruals. In this sense, numerous studies suggest that higher quality auditors reduce the level of accrual earnings management (Becker *et al.*, 1998; Caneghem, 2004; Gul *et al.*, 2002, 2006; Jordan *et al.*, 2010; Krishnan, 2003; Lin and Hwang, 2010).

Using US data, Becker *et al.* (1998) investigate the effect of audit quality on earnings management. Their results evidence that Big 6 auditors are of higher quality than non-Big 6 auditors, and also indicate that higher audit quality is associated with less "accounting flexibility". Francis *et al.* (1999) find that companies with Big 6 auditors have lower amounts of discretionary accruals than those audited by non-Big 6 auditors. Krishnan (2003) and Chi *et al.* (2011) also find that Big firm auditors constrain earnings management. Similar results have been documented in the UK (Gore *et al.*, 2001), in Mexico (Teitel and Machuga, 2010), Taiwan (You *et al.*, 2003; Chen *et al.*, 2005; Chiang *et al.*, 2011), Europe[1] (Tendeloo and Vanstraelen, 2008) and Iran (Gerayli *et al.*, 2011). On the other hand, other studies report no significant relationship between Big 4 audit firms and earnings management. For example, Maijor and Varstraelen (2006) examine the effect of audit firm quality on earnings management in three European countries (France, Germany and the UK). Their results suggest that Big 4 audit firm do not appear to constitute a constraint on earnings management. Piot and Janin (2007) find that the presence of a Big 5 auditor makes no difference regarding earnings management activities for a sample of French firms. Using US data, Sun *et al.* (2011) report an insignificantly positive relationship between Big 4 audit firms and earnings management. Rahman and Ali (2006) also find an insignificantly positive relationship between Big 5 audit firms and earnings management for a sample of Malaysian firms.

Finally, some studies find evidence to the contrary. Using US data, Li and Lin (2005) and Lin *et al.* (2006) find that the firms audited by Big 5 audit firms report more earnings management than firms audited by non-Big 5 audit firms. Similarly, Antle *et al.* (2006) also report that clients of Big 6 auditors have higher abnormal accruals than clients of other auditors for a sample of UK companies.

Taken together, previous studies suggest that Big audit firms may contribute to reduce or increase earnings management.

Under the assumption that high-quality audits actually serve as an earnings management constraint, our second hypothesis is:

- H2. Listed firms in Portugal audited by Big 4 audit firms engage less earnings management than firms audited by non-Big 4 auditors.

### 3.3 Interaction between audit committee existence and external audit

Previous studies have treated audit committees and external auditors as independent monitoring mechanisms as they relate to earnings management (Baxter and Cotter, 2009;

Becker *et al.*, 1998; Chi *et al.*, 2011; Chiang *et al.*, 2011; Dechow *et al.*, 1996; DeFond and Jiambalvo, 1991; Francis *et al.*, 1999; He *et al.*, 2007; Rahman and Ali, 2006; Sun *et al.*, 2011). Nevertheless, both monitoring mechanisms are a part of the overall corporate governance structure of the firm; consequently, it is unlikely that they operate independently within the corporate structure.

As referred previously, in the presence of an audit committee, the White Book on corporate governance in Portugal recommends that: the audit committee shall defines the scope and depth of external auditing services, including the approval of action plans and activity programs; the auditing committee shall be the interlocutor of the company with the external auditor and the first recipient of its audit reports; the audit committee shall promotes the articulation and comparison between internal and external auditing report; and, the audit committee shall discloses, in the report of the board of directors, all the economic relations of the company with the external auditor, detailing all the amounts paid and separating auditing from non-auditing services.

External audit play a vital role in lending independent credibility to published financial statements used by stakeholders as a basis for making capital allocation decisions. Therefore, the audit committee and external auditor have the incentive to issue high quality reports. In addition, the audit committee and external auditor are also expected to perform high quality audit work in order to maintain reputation, audit market and avoid legal liability.

Therefore, it is likely that both monitoring mechanisms operate jointly to mitigate earnings management. So, our third hypothesis is:

*H3.* The presence of both monitoring mechanisms functioning jointly within the firm has an additional effect on the level of earnings management.

#### 4. Variable measurement and research design

##### 4.1 Measuring audit committee existence and external audit

Audit committee existence (*Audit*) is measured as an indicator variable taking the value of 1 when the firm has an audit committee and 0 otherwise.

External audit (*Big4*), consistent with prior research (Becker *et al.*, 1998; Chen *et al.*, 2005; Chi *et al.*, 2011; Li and Lin, 2005; Lin *et al.*, 2006; Rahman and Ali, 2006; Sun *et al.*, 2011; Tendeloo and Vanstraelen, 2008), we measure external audit as a dichotomous variable equal to 1 if the auditor is a Big 4 audit firm (Deloitte Touche Tohmatsu; Ernst & Young; KPMG; PricewaterhouseCoopers), and 0 otherwise.

##### 4.2 Measuring earnings management

Following standard accounting literature, we use discretionary accruals as a proxy for earnings management. Discretionary accruals are estimated using the cross sectional variation of the modified Jones model proposed by Dechow *et al.* (1995), that is commonly used by most of earnings management research (Antle *et al.*, 2006; Bukit and Iskandar, 2009; Chen *et al.*, 2005; Choi *et al.*, 2004; Gerayli *et al.*, 2011; Johl *et al.*, 2007; Peasnell *et al.*, 2005; Rahman and Ali, 2006; Sierra García *et al.*, 2012).

The modified Jones' model consists of regressing total accruals (*TACC*) of three variables: the change in revenues ( $\Delta Rev$ ), the change in receivables ( $\Delta Rec$ ) and the level of gross property, plant and equipment (*PPE*). All variables and the intercept are divided by lagged total assets in order to avoid problems of heteroskedasticity. Non-discretionary



accruals (NDACC) are the predictions from the ordinary least squares (OLS) estimation of the model (1), while discretionary accruals (DACC) are the residuals. Audit committee existence and external audit

The modified Jones model is as follows:

$$\frac{TACC_{it}}{TA_{it-1}} = \alpha_1 \left( \frac{1}{TA_{it-1}} \right) + \alpha_2 \left( \frac{\Delta Rev_{it} - \Delta Rec_{it}}{TA_{it-1}} \right) + \alpha_3 \left( \frac{PPE_{it}}{TA_{it-1}} \right) + \varepsilon_{it} \quad (1)$$

where:

*TACC* = total accruals in year t, calculated as the difference between net income and operating cash flows.

*TA* = total assets at the beginning of year t.

$\Delta Rev$  = change in revenues.

$\Delta Rec$  = change in accounts receivable.

*PPE* = gross property, plant and equipment.

i, t = firm and year index.

#### 4.3 Regression models and control variables

We evaluate the association between audit committee existence, external audit, and the interaction between these two variables and earnings management by estimating the following OLS regression:

$$DACC_{it} = \beta_0 + \beta_1(Audit_{it}) + \beta_2(Big4_{it}) + \beta_3(Audit*Big4_{it})\varepsilon_{it} \quad (2)$$

where:

*DACC<sub>it</sub>* = discretionary accruals of firm i for period t estimated from the modified Jones model (Dechow *et al.*, 1995).

*Audit<sub>it</sub>* = dummy variable: 1 if the firm has an audit committee and 0 otherwise.

*Big4<sub>it</sub>* = dummy variable: 1 if the auditor is a Big4 and 0 otherwise.

*Audit\*Big4<sub>it</sub>* = dummy variable: 1 if the firm has an audit committee and the auditor is a Big4 and 0 otherwise.

$\varepsilon_{it}$  = residual term of firm i for period t.

$\beta_0$  is a constant,  $\beta_1$ - $\beta_3$  are the coefficients.

This model allows us to determine both the main and interactive effect of audit committee existence and external auditor on earnings management.

Given that the existence of an audit committee, external audit (Big4/non-Big4) and the interaction of these two variables are not the sole factors affecting earnings management, we also evaluate the association between these variables and earnings management, after controlling the impact of other relevant variables. Several control variables are introduced to isolate other contracting incentives that may influence managers' accounting choices. Previous studies suggest that board size (*Board*), nonduality (*Nonduality*), leverage (*Lev*), political costs (*Size*) and performance

(*Performance*) are associated with earnings management (Alves, 2011; Chen *et al.*, 2011; Chung *et al.*, 2002; Dechow *et al.*, 1995; DeFond and Jiambalvo, 1994; DeFond and Park, 1997; Klein, 2002; Peasnell *et al.*, 2005; Xie *et al.*, 2003; Yang *et al.*, 2008).

The association between audit committee, external audit, and interaction between these two variables and earnings management, controlling the impact of other relevant variables is estimated using the following OLS regression:

$$DACC_{it} = \beta_0 + \beta_1(Audit_{it}) + \beta_2(Big4_{it}) + \beta_3(Audit*Big4_{it}) + \beta_4(Board_{it}) + \beta_5(Nonduality_{it}) + \beta_6(Lev_{it}) + \beta_7(Size_{it}) + \beta_8(Performance_{it}) + \varepsilon_{it} \quad (3)$$

where:

$DACC_{it}$ , $Audit_{it}$ , $Big4_{it}$ , $Audit*Big4_{it}$ and $\varepsilon_{it}$	= as defined previously.
$Board_{it}$	= number of members of the board of the firm <i>i</i> for period <i>t</i> .
$Nonduality_{it}$	= dummy variable: 1 when firm's CEO and board chair is not the same person and 0 otherwise.
$Lev_{it}$	= ratio between the book value of all liabilities and the total assets of firm <i>i</i> for period <i>t</i> .
$Size_{it}$	= logarithm of market value of equity of firm <i>i</i> for period <i>t</i> .
$Performance_{it}$	= average stock returns of firm <i>i</i> for period <i>t</i> .

$\beta_0$  is a constant,  $\beta_1$ - $\beta_8$  are the coefficients.

*Control variables explained.* According to Jensen (1993) *board size* is related to board effectiveness. A higher the number of members on the board lead to a greater the monitoring activity of management. If large boards enhance monitoring, they would be associated with less use of earnings management. Chtourou *et al.* (2001), Ebrahim (2007), Eisenberg *et al.* (1998) and Xie *et al.* (2003) find that larger boards are associated with lower levels of discretionary accruals.

Agency theory suggests that CEO duality (i.e. the CEO also serves as chairman of the board) increases agency problems, because duality promotes CEO entrenchment by reducing board independence (Finkelstein and D'Aveni, 1994; Jensen and Meckling, 1976; Rhoades *et al.*, 2001). Therefore, agency theory predicts a negative relationship between nonduality and earnings management. Numerous studies support agency theory predictions (Davidson *et al.*, 2004; Dechow *et al.*, 1996).

Previous studies document that managers of highly *leveraged* firms have strong incentives to use income increasing accruals to loosen the contractual debt-constraints (Ali *et al.*, 2008; DeFond and Jiambalvo, 1994; Jiang *et al.*, 2008). Nevertheless, highly indebted firms may be less able to practice earnings management because they are under close scrutiny of lenders. In this sense, Chung *et al.* (2002), Peasnell *et al.* (2000), Park and Shin (2004) and Yang *et al.* (2008) find a negative relationship between leverage and earnings management.

According to the size hypothesis, large firms may have incentives to reduce political costs by reducing reported earnings (Koh, 2003). Banderlipe (2009), Jiang *et al.* (2008) and Peasnell *et al.* (2000) find that larger firms are associated with lower absolute discretionary accruals. Nevertheless, larger firms may have higher incentives to manage earnings, because they are subject to closer scrutiny by the investment banks and analyst community, leading them to adopt aggressive accounting policies (Chen *et al.*, 2007). Chen *et al.* (2007), Chung *et al.* (2002) and Yang *et al.* (2008) find that larger firms are associated with higher absolute discretionary accruals.

Chen *et al.* (2006, 2011) and Shah *et al.* (2009) provide evidence suggesting that firms with lower performance have higher behaviour of earnings management.

### 5. Sample selection and characteristics

The initial sample includes all companies whose stocks are listed in the main market, Euronext Lisbon. A total of 50, 48, 51, 51, 51, 50 and 49 companies were listed at the year end of 2003, 2004, 2005, 2006, 2007, 2008 and 2009, respectively, (350 firm-year observations in total).

Foreign companies (25 in total) are excluded. Companies not having shares listed in the previous year and companies whose shares were delisted in the following year are also excluded (57 in total). Companies (four in total) with missing data and financial companies (33 in total) are also excluded. As a result, the final sample size is 33 non-financial companies per year and, thus, 231 observations in total. This reduced number of observations may influence some results. Nevertheless, this limitation is an immediate consequence of the small size of the Portuguese stock market.

Information on audit committee existence, external auditor, annual number of board meetings, nonduality, total assets, revenues, gross property, plant and equipment, receivables and net income are collected from the Annual Report and Corporate Governance Report. Both Annual Report and Corporate Governance Report are available on-line at: [www.cmvm.pt](http://www.cmvm.pt). We obtain stock price data from the Euronext Lisbon, which allows measuring the variable firm size and performance.

Table I presents the sample descriptive statistics for the explanatory variables used in this research.

	Mean	Median	Min.	Max.
<i>Audit</i>	52.381	1.000	0.000	1.000
<i>Big4</i>	69.697	1.000	0.000	1.000
<i>Board</i>	8.210	8.000	3.000	23.000
<i>Nonduality</i>	0.403	0.000	0.000	1.000
<i>Lev</i>	5.630	1.864	-3.309	25.552
<i>Size</i>	19.149	19.022	14.447	23.517
<i>Performance</i>	0.001	0.000	-0.004	0.036

**Notes:** Number of observations: 231, period: 2003-2009; *Audit* dummy variable which takes a value 1 if the firm *i* has an audit committee for period *t*, and 0 otherwise; *Big4* dummy variable which takes a value 1 if the auditor is a Big4; *Board* is the number of members of the board; *Nonduality* dummy variable which takes a value 1 when firm's CEO and board chair is not the same person and 0 otherwise; *Lev* represents the ratio between the book value of all liabilities and the total assets; *Size* represents the firm's size; *Performance* is the firm's performance

**Table I.**  
Summary of descriptive  
statistics

Table I shows that about 52 percent of firms have an audit committee (*Audit*). Big 4 auditors are used by 69.7 percent of the sample firms. Board size (*Board*) is comprised of approximately eight members (with a median of eight members). Because the minimum number of members on the board is three and the maximum number of members is 23, large differences exist across different firms for this variable. In about 40.3 percent of companies there is a separation of the functions of the CEO and chairman. *Lev* variable represents on average 5.63 of the total assets of the company (with a median of 1.864). The mean of firm size (*Size*) is about €1.260 million with a minimum of €1.881 thousand and a maximum of €16.345 million. The mean and the median to *Performance* variable is 0.1 percent and 0.0 percent, respectively, with a minimum of -0.4 percent and a maximum of 3.6 percent.

The analysis of Table II shows that there are some significant correlations between the variables. *Audit* and *Big4* are positively related, suggesting that these monitoring mechanisms will play a complementary effect. Therefore, audit committee existence and external audit may act as a complementary in controlling management. A positive correlation between *Audit* and *Board* suggest that in firms with large boards it is more common to have a separate audit committee. *Audit* and *Nonduality* are positively related, suggesting that firm with separate chairman tend to have a separate audit committee. *Audit* is positively associated with *Size*, suggesting that large firms appear to be more likely to create an audit committee. A positive correlation between *Board* and *Big4* indicates that firms with large boards are more likely to hire a Big 4 audit firm. *Nonduality* and *Big4* are positively related, suggesting that firm with separate chairman tend to hire a Big 4 audit firm. *Firm size* and *Big4* is positively related, suggesting that large companies are more likely to hire one of the Big 4 audit firms. *Board* and *Nonduality* are positively related, suggesting that firms with large boards tend to separate the chairman and CEO roles. *Size* is positively correlated with both *Board*, suggesting that large firms have greater board size. *Nonduality* is positively correlated with *Size*, implying that larger firms have higher incidence of CEO nonduality. *Size* is negatively associated with *Lev*, suggesting that larger firms have lower leverage constraint levels. Correlation coefficients are, in general,

	<i>Audit</i>	<i>Big4</i>	<i>Board</i>	<i>Nonduality</i>	<i>Lev</i>	<i>Size</i>	<i>Performance</i>
<i>Audit</i>	1						
<i>Big4</i>	0.261***	1					
<i>Board</i>	0.504***	0.322***	1				
<i>Nonduality</i>	0.480***	0.295***	0.406***	1			
<i>Lev</i>	0.033	0.015	0.033	0.065	1		
<i>Size</i>	0.545***	0.535***	0.689***	0.443***	-0.201***	1	
<i>Performance</i>	-0.042	0.098	-0.108	-0.050	-0.008	-0.060	1

**Notes:** Correlation is significant at: \*\*0.05 and \*\*\*0.01 levels (two-tailed); *Audit* dummy variable which takes a value 1 if the firm *i* has an audit committee for period *t*, and 0 otherwise; *Big4* dummy variable which takes a value 1 if the auditor is a Big4; *Board* is the number of members of the board; *Nonduality* dummy variable which takes a value 1 when firm's CEO and board chair is not the same person and 0 otherwise; *Lev* represents the ratio between the book value of all liabilities and the total assets; *Size* represents the firm's size; *Performance* is the firm's performance

**Table II.**  
Pearson correlation  
coefficients matrix

low (below the 0.9 threshold) (Tabachnick and Fidell, 2001), suggesting the absence of serious statistical problems related with multicollinearity.

Audit committee existence and external audit

## 6. Results and discussion

Table III presents OLS regression estimates for the equations (2) and (3) developed in Section 3.

Table III reports the results from both equations (2) and (3) which examine the effects of audit committee existence, external audit and the interaction between these variables on CEO earnings management behaviours. Column (1) presents the results from equation (2) and columns (2) and (3) present the results considering only one of the monitoring mechanism's relations with earnings management. Column (4) includes both monitoring mechanisms, and column (5) presents the results from equation (3), which contains both the monitoring mechanisms and the interaction term.

With respect to the influence of audit committee existence on the earnings management, in contrast to expected, we find a positive relationship between them. This suggests that firms with an audit committee tend to exhibit greater earnings management. There are at least three possible explanations for the positive coefficient. The first is that as non-executives directors, audit committee members (themselves mostly non-executives directors) are confronted with an information asymmetry problem; they have less information about the elements they are overseeing than management. The second is that audit committee members may be also ineffective, mainly because of lack of time (due to multiple non-executive directorships) and lack of knowledge/low levels of knowledge to understand the accounting information and whether the accounting judgments made by management are appropriate. A third possible explanation for this finding may relate to the

Dependent variable	DACC				
Independent variables	(1)	(2)	(3)	(4)	(5)
Constant	-1.224***	0.015	0.143	0.344	-0.504**
<i>Audit</i>	1.326***	0.270		0.310*	1.247***
<i>Big4</i>	1.120***		0.370**	0.403**	0.907***
<i>Audit*Big4</i>	-0.857***				-1.573***
<i>Board</i>		-0.293***	-0.310***	-0.309***	-0.352***
<i>Nonduality</i>		0.060	0.113	0.018	0.173
<i>Lev</i>		0.033***	0.034***	0.034***	0.040***
<i>Size</i>		0.294***	0.282***	0.245***	0.311***
<i>Performance</i>		-0.008	-0.004	-0.005	0.006
$R^2$ (%)	23.52	29.77	30.32	31.28	38.13
Adjusted $R^2$ (%)	22.51	27.88	28.44	29.11	35.89
F-statistic	23.274***	15.751***	16.171***	14.436***	17.024***

**Notes:** Significant at: \*10, \*\*5 and \*\*\*1 percent levels; number of observations: 231, period: 2003-2009; *DACC* represents earnings management; *Audit* dummy variable which takes a value 1 if the firm *i* has an audit committee for period *t*, and 0 otherwise; *Big4* dummy variable which takes a value 1 if the auditor is a Big4; *Audit\*Big4* represents the interaction between audit and Big4; *Board* is the number of members of the board; *Nonduality* dummy variable which takes a value 1 when firm's CEO and board chair is not the same person and 0 otherwise; *Lev* represents the ratio between the book value of all liabilities and the total assets; *Size* represents the firm's size; *Performance* is the firm's performance

**Table III.**  
OLS regression results

lack of "roles" for audit committees. The CMVM does not have explicit recommendations that could improve the effectiveness of audit committees (e.g. independence, expertise, meetings and size). In fact, several studies suggest that audit committee independence (Benkel *et al.*, 2006; Bukit and Iskandar, 2009; Chang and Sun, 2009; Davidson *et al.*, 2005; Ebrahim, 2007; Klein, 2002; Saleh *et al.*, 2007; Sierra García *et al.*, 2012), audit committee expertise (Bédard *et al.*, 2004; Dhaliwal *et al.*, 2010; Lin *et al.*, 2006; Saleh *et al.*, 2007; Sierra García *et al.*, 2012; Xie *et al.*, 2003) and audit committee meetings (Saleh *et al.*, 2007; Xie *et al.*, 2003) play an important role in constraining earnings management.

We also find that the relationship between Big 4 and earnings management is significantly positive. As in Antle *et al.* (2006), Li and Lin (2005) and Lin *et al.* (2006), this result suggests that firms audited by Big 4 audit firms report more discretionary accruals than firms audited by non-Big 4 audit firms. Therefore, this finding is not consistent with the notion that Big 4 audit firms mitigate earnings management more than non-Big 4 audit firms. However, this result seems to be consistent with the long list of corporate failures, which indicates that management have often engaged in earnings management, and Big audit firms have not been effective in identifying and preventing unscrupulous accounting practices.

The coefficient of the interaction between audit committee existence and external audit is significantly negative. This finding suggests that audit committee existence and external audit (Big4 audit firm) jointly appear to reduce the level of earnings management.

Regarding the other variables, included as control variables, as in Ebrahim (2007), Eisenberg *et al.* (1998) and Xie *et al.* (2003), we find a negative relationship between *Board* and earnings management, suggesting that larger boards are associated with lower levels of discretionary accruals. *Lev* is significantly positive providing evidence that an increase in leverage encourage managers to use more accruals to manage earnings to avoid debt covenant violation, confirming the prediction and results of DeFond and Jiambalvo (1994) and Jiang *et al.* (2008). Finally, as in Chen *et al.* (2007), Chung *et al.* (2002) and Yang *et al.* (2008), we find that large firms have a higher level of earnings management, suggesting that larger firms are better able to manage accounting information and hide real performance.

Results suggest no evidence that *Nonduality* and *Performance* affect the levels of earnings management.

## 7. Sensitivity analyses

To ensure the robustness of our results, we perform several sensitivity checks. The first sensitivity analysis tests the impact of using alternative definition for the earnings management variable on regression results. Discretionary accruals are determined using the Jones model instead of the modified Jones model. The Jones' model consists of regressing total accruals (*TACC*) on two variables: the change in revenues ( $\Delta Rev$ ), which models the normal component of working capital accruals; and the level of gross *PPE*, included to control the non-discretionary component of depreciation and amortisation expense, the main component of long-term accruals. The specific Jones model is as follows:

$$\frac{TACC_{it}}{TA_{it-1}} = \alpha_1 \left( \frac{1}{TA_{it-1}} \right) + \alpha_2 \left( \frac{\Delta Rev_{it}}{TA_{it-1}} \right) + \alpha_3 \left( \frac{PPE_{it}}{TA_{it-1}} \right) + \varepsilon_{it} \quad (4)$$

where:

$TACC$  = total accruals in year  $t$ , calculated as the difference between net income and operating cash flows.

$TA$  = total assets at the beginning of year  $t$ .

$\Delta Rev$  = change in revenues.

$PPE$  = gross property, plant and equipment.

$i, t$  = firm and year index.

The results (not reported here) using alternative variable to measure earnings management do not differ from results presented previously in Table III.

The next sensitivity analysis examines the effect of influential observations on results. Where outliers are found (namely in the variables *Board*, *Lev* and *Performance*), a winsorization method is used to test the robustness of the results. Extreme values (defined as values that are more than three standard deviations away from the mean) are replaced by values that are exactly three standard deviations away from the mean. The results (not reported here) have implications on the *Board* variable, conducting to a decrease of the significance level (from  $p < 0.01$  to  $p < 0.05$ ). The other results remain unchanged (at coefficient signal and significant level).

As the ownership in Portuguese listed firms is highly concentrated, the next sensitivity analysis examines the effects of ownership concentration on discretionary accruals. The *Ownership Concentration* variable is calculated as the proportion of stocks owned by shareholders who own at least 2 percent of the common stock of firm  $i$  for period  $t$ . The unreported results of these tests are qualitatively the same as those observed in the earlier section.

We also examine the effects of cash flows from operations on earnings management. Extant literature indicates that cash flows from operations and discretionary accruals are negatively correlated (Dechow *et al.*, 1995; Sloan, 1996). The *Cash Flows from Operations* variable is introduced to examine the robustness of the results present in Section 6. The *Cash Flows from Operations* variable is the ratio between the operating cash flows and the total assets of firm  $i$  for period  $t-1$ . The unreported results of these tests are qualitatively the same as those observed in the earlier section. All the estimated coefficients for *Audit*, *Big4* and *Audit\*Big4* retain their significance level and have the same signs. The *Cash Flows from Operations* variable is significantly negatively related to earnings management, which suggests that firms with strong operating cash flows are less likely to use discretionary accruals to engage in earnings management.

Sloan (1996) finds evidence of a concave relation between firm size and total accruals. Thus, equations (2) and (3) are re-estimated by including an additional variable,  $Size^2$ , to examine whether the size effect has an effect on the relationship between audit committee existence, external audit and earnings management. Both *Size* and  $Size^2$  are statistically positive. All the results (not reported) are qualitatively the same. Thus, the observed impact of audit committee existence, external audit and the interaction between these two monitoring mechanisms on earnings management is unlikely to be a size effect.

The above analyses indicate that the results of this paper are robust after controlling the impact of using alternative definition for the earnings management variable,

the effect of influential observations, the effect of ownership concentration, the effect of cash flows from operations and different specification of the relationship between size and earnings management.

### 8. Summary and conclusions

Earnings management is of great concern to corporate stakeholders. Audit committee existence and external auditor are supposed to serve as a monitoring device that reduces management incentives to manipulate reported earnings. In practice, however, auditors may not be efficient in enhancing the credibility of financial statements. In fact, the long list of recent corporate failures indicates that many audit committees and external auditors have not been effective in identifying and preventing unscrupulous accounting practices.

This paper examines the impact of audit committee existence and external auditor on earnings management. Additionally, as the audit committee selects the external auditor and the external auditor report to the audit committee, it is likely that these two mechanisms operate jointly to mitigate earnings management. Therefore, we also examine the joint association between earnings management and the two monitoring mechanisms. In contrast to results of most previous studies, which assume that audit committees and external auditor act independently from one another, we find a positive relationship between both audit committee and external audit and discretionary accruals for a sample of 33 non-financial listed Portuguese firms-year from 2003 to 2009. This finding indicates that firms with a separate audit committee report high discretionary accruals. Therefore, simply having an audit committee may not be enough to monitor the reliability of the company's accounting and auditing process and consequently, protect shareholder interests. This suggests that the Portuguese regulator (CMVM) should focus on issues related to establishing and continuously improving regulatory effectiveness of audit committees, rather than simply focus on establishing those committees.

This study also indicates that earnings management in companies audited by non-Big 4 audit firm is smaller than in companies audited by Big 4 audit firm. This result seems to be consistent with the long list of corporate failures, which indicates that management have often engaged in earnings management, and Big audit firms have not been effective in identifying and preventing unscrupulous accounting practices. However, the results also suggest that audit committee existence and external auditor jointly interact to reduce earnings management. Therefore, our findings suggest that the monitoring mechanisms are not independent from one another; rather they appear to act as complementary in their mitigation of earnings management.

Moreover, the results also reveal lower earnings management when board size is high, and higher earnings management when leverage and firm size are high.

The findings of this study make the following contributions. First, the results appear to suggest that audit committee existence and external audit independently do not provide effective monitoring of earnings management in Portuguese listed firms. Second, this study also suggests that audit committee existence and external audit jointly reduce earnings management. In particular, this finding suggests that audit committee existence and external audit jointly are a positive step toward improving earnings quality. Third, the findings are relevant for countries with an institutional environment similar to that of Portugal. Finally, investors may also benefit from the findings because they provide insight into the impact of audit committees and Big 4 audit firms on earnings quality.



This study has, however, some limitations. First, the reduced number of observations may influence some results. Nevertheless, this limitation is an immediate consequence of the small size of the Portuguese stock market. Second, we compute discretionary accruals using the modified Jones model (Dechow *et al.*, 1995) and the Jones model (1991). Although the models are accepted in accounting research, the accuracy of measurement of discretionary accruals will depend on how accurately the models can segregate discretionary accruals from total accruals. Finally, the selection of the potential incentives can lead to the omission of some important incentives for earnings management. This mis-specification can generate biased and inconsistent estimates. Actually, other factors can influence the earnings management, such as ownership structure (Ali *et al.*, 2008), meet analysts' forecasts (Athanasakou *et al.*, 2009; Kasznik, 1999), initial public offerings (Teoh *et al.*, 1998a), seasoned equity offerings (Teoh *et al.*, 1998b), stock-financed acquisitions (Erickson and Wang, 1999) and the managerial compensation structure (Cheng and Warfield, 2005; Guidry *et al.*, 1999; Healy, 1985; Holthausen *et al.*, 1995; Kuang, 2008; Zhang *et al.*, 2008).

#### Note

1. Mainly, Belgium, Finland, France, The Netherlands, Spain and the UK.

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