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Ownership Structure and Earnings Management: Evidence from Portugal

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Keywords
Earnings management, Discretionary accruals, Ownership structure, Ownership Management: Evidence from Portugal

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Ownership Structure and Earnings Management: Evidence from Portugal

Sandra Alves[1]

Abstract

This paper examines the relationship between corporate ownership structure in Portugal and earnings management. The Portuguese governance structure is characterised by the dominance of the largest shareholder who typically exercises significant influences on management decisions directly or indirectly. Existing literature suggests that ownership structure decreases the incentive to manage earnings but also provides the opportunity and incentive to manipulate earnings. Therefore, the main purpose of this paper is to analyse whether a firm's ownership structure (measured with three variables: managerial ownership, ownership concentration and institutional ownership) exacerbate or alleviate earnings management. Using a sample of 34 non-financial listed Portuguese firms for years from 2002 to 2007, we find that discretionary accruals as a proxy for earnings management is negatively related both to managerial ownership and to ownership concentration. The study's results suggest that both managerial ownership and ownership concentration improve the quality of annual earnings by reducing the levels of earnings management.

Keywords: Earnings management, Discretionary accruals, Ownership structure, Ownership concentration.

JEL Classification: M410, G32, G34.

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Introduction

In a world characterised by imperfect information and costly monitoring, a divergence of interests between shareholders and management can lead to suboptimal management decisions. Such decisions are possible because the actions of managers are largely unobservable and the goals of the managers and their shareholders are not necessarily aligned. Managers are posited to opportunistically manage earnings to maximise their utility at the expense of other stakeholders. Agency theory suggests that the monitoring mechanisms can improve the alignment of management and shareholders' interests and mitigate any opportunistic behaviour resulting from conflict of interests.

Accounting earnings is considered as one of the main indicators of financial performance of a firm. Naturally, the phenomenon of earnings management has already drawn the attention of academic researchers, financial markets regulators, operators and investors.

Previous studies have focused mainly on the incentives of earnings management. The most important incentives investigated in prior literature include: compensation contracts (Guidry, Leone & Rock 1999; Healy 1985; Holthausen, Larcker & Sloan 1995), reduce political costs (Key 1997; Watts & Zimmerman 1986), signal manager's private information (Healy & Papepu, 1995), avoid losses (Burgstaher & Bichev 1997), meet analysts' forecasts (Athanasakou, Strong & Ealker 2009; Kasznik 1999), avoid debt covenant violations (DeFond & Jiambalvo 1994), initial public offerings (Teoh, Welch & Wong 1998a), seasoned equity offerings (Teoh, Welch & Wong 1998b) management buyouts (DeAngelo 1986; Perry & Williams 1994) and stock-financed acquisitions (Erickson & Wang 1999).

However, there exists a variety of factors that limit earnings management. In fact, some studies have indicated that certain corporate governance factors have an impact on corporate accounting behaviour, including earnings management (Dechow, Sloan & Sweeney 1996; Dempsey, Hunt & Schroeder 1993; Jiambalvo 1996). For example, Warfield, Wild and Wild (1995) argue that managers who own a significant portion in the equity of a firm have less incentive to manipulate reported accounting information. Dechow et al. (1996) suggest that large block-holders of shares improve credibility of a firm's financial statements by providing close scrutiny over its earnings management activity. Balsam, Bartov and Marquardt (2002) state that institutional investors, who are sophisticated investors, are more capable of detecting earnings management than non-institutional investors because they have more access to timely and relevant information. Chung, Firth and Kim (2002) find that the institutional shareholdings inhibit managers from managing accruals to achieve desired level of earnings. These studies suggest that a firm's ownership structure have a significant impact on the magnitude of earnings management and earnings quality.

In this study, we examine the effect of ownership structure on a firm's earnings management activity. Using a sample of 34 Euronext Lisbon non-financial firms over a period of 6 years, from 2002 through 2007, we find evidence that both managerial ownership and ownership concentration reduce management flexibility in generating abnormal accounting accruals. Thus, this study suggests that despite differences in institutional environments, ownership structure is important to ensure high-quality financial reporting.

The study makes three-fold contributions to the existing earnings management literature. First, the subject of financial reporting is of great value to all users of financial statements in making decisions. Therefore, the study of earnings management is expected to be very significant to the users. The findings of this study will be important to Euronext Lisbon and other regulators that are concerned about earnings management and improving the quality of financial reporting. Second, although a few studies using mainly US and UK data have examined whether the ownership structure constrains earnings management activity, to our knowledge there is no study in Portugal that analyse this issue. The Portuguese market presents a unique case in the study of the association between ownership structure and earnings management, because, while the ownership in the US and in the UK listed firms is widely diffused, the ownership in Portuguese listed firms is highly

concentrated. This feature can influence the earnings management activity, because highly concentrated ownership determines the nature of the agency problem in Portuguese firms. In fact, in firms with a concentrated ownership, there is a real danger that dominant shareholders may mistreat or expropriate minority shareholders. Third, contrary to major earnings management research that examines the main incentives; we directly study the effects of corporate governance, mainly the ownership structure, on the magnitude of earnings management.

This paper is structured as follows. In the next section we provide an overview of the literature review and develop testable hypotheses. We present the variable measurement and describe the research methodology in the third section. The sample selection process and characteristics of the sample are presented in the fourth section. The results are reported and discussed in the fifth section. We provide sensitivity tests in the sixth section. The final section concludes the study.

Literature Review and Testable Hypotheses

According to agency theory, separation of ownership and control leads to a divergence in the pursuit of managerial interests versus owners' interests (Jensen & Meckling 1976), and thus monitoring managerial decisions becomes essential to assure that shareholders' interests are protected, and to ensure reliable and complete financial reporting. Corporate governance provides a set of constraints to reduce the agency costs originated by the nexus of contracts in the firm (Iturriaga & Hoffmann 2005) or a framework to ensure suppliers of corporate finance achieve a return on their investment (Shleifer & Vishny 1997). 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 & Smith 2003). Thus, properly structured corporate governance mechanisms are expected to reduce earnings management because they provide effective monitoring of management in the financial reporting process. Some studies have documented that the manager's incentive to manage earnings is limited by certain corporate governance mechanisms (Dechow et al. 1996; Jiambalvo 1996). The ownership structure of a firm is considered an important managers' monitoring mechanism, so it may have a monitoring role in constraining the occurrence of earnings management. Extant literature suggests that different ownership structures imply different incentives to control and monitor a firm's management (Morck, Shleifer & Vishny 1988; Shleifer & Vishny 1986). For example, ownership concentration has implications for the level of information asymmetry between managers and investors, and this influences the quality of earnings and managers' accounting choices (Donnelly & Lynch 2002; Fan & Wong 2002). The quality of earnings is also associated with different types of ownership. For example, management ownership could have a negative effect on earnings management (Warfield et al. 1995) or a positive effect due to entrenchment or expropriation effects (Cheng & Warfield 2005). Other studies have also investigated whether institutional investors have an impact on earnings management (Cornett, Marcus & Tehraniam 2008; Ebrahim 2007).

To analyse whether a firm's ownership structure provides effective monitoring of earnings management, three types of ownership are considered: managerial ownership, ownership concentration and institutional ownership.

Managerial Ownership and Earnings Management

Jensen and Meckling (1976) suggest that CEOs deviate from the goal of shareholder wealth-maximisation by consuming perquisites when they do not have an ownership stake in the firm. Accordingly, contracts are written, often containing accounting-based constraints, to restrict managers' value-reducing (or non-value-maximising) behaviour when ownership and control are distinct (Warfield et al. 1995). Thus, lower managerial ownership has greater incentives to manage accounting numbers to relieve or relax the behavioural constraints imposed in accounting-based contracts (Warfield et al. 1995).

According to agency theory managerial shareholdings encourage managers to improve firm value, since managers bear a proportion of the wealth effects as a shareholder. As a result, CEO's stock ownership can lead to a convergence of interests between managers and shareholders (alignment of interest hypothesis). Consequently, whether CEO's stock ownership helps in aligning managerial interests with those of the stockholder, we can expect that as management ownership increases, the incentives to manipulate earnings will decrease. In this vein, Ali, Salleh and Hassan (2008), Banderlipe (2009), Dhaliwal, Salamon and Smith (1982), Ebrahim, (2007), Klein (2002) and Warfield et al. (1995) find that managerial ownership is associated with lower levels of earnings management.

Nevertheless, to the extent that managers' and shareholders' interests are not fully aligned, higher stock ownership can give managers much power to pursue their own objectives without fear of punishment; i.e., it can entrench managers (Denis & McConnell 2003; Fama & Jensen 1983; Weisbach 1988). Hence, the entrenchment hypothesis suggests that CEO's stock ownership, instead of reducing managerial incentive problems, may entrench the incumbent management team, leading to increasing managerial opportunism (Fama & Jensen 1983). In this sense, the results of prior studies indicate that CEOs manage earnings to maximise their personal wealth (Cheng & Warfield 2005; Guidry et al 1999; Healy 1985; Holthausen et al. 1995). In fact, managers with high stock ownership could gain from earnings management with the purpose of keeping stock prices high and increasing the value of their shares (Yang, Lai & Tan 2008). Therefore, higher managerial ownership may encourage managers to use discretionary accruals to improve earnings and, consequently, the value of their stock holdings. Al-Fayoumi, Abuzayed and Alexander (2010), Cheng and Warfield (2005) and Mitani (2010) find that firms with higher managerial ownership are associated with more earnings management.

There is no consensus in studies examining the relationship between managerial ownership and earnings management, so our hypothesis is non-directional and states:

Alternative Hypothesis (H1a): Ceteris paribus, the percentage of managerial ownership in the firm is related to earnings management.

Ownership Concentration and Earnings Management

Small shareholders would not be interested in monitoring because they would bear all the monitoring costs, but only share a small proportion of the benefit. Consequently, shareholders owning a small fraction of outstanding share have incentives to free-ride in monitoring management. Shleifer and Vishny (1986) suggest that large shareholders have a strong incentive to actively monitor and influence firm management to protect their significant investments (the efficient monitoring hypothesis). Therefore, ownership concentration may reduce agency costs by increasing monitoring and alleviating the free-ride problem (Demsetz & Lehn 1985; Shleifer & Vishny 1986, 1997). Large shareholders are expected to monitor managerial behaviour actions effectively, which reduce the scope of managerial opportunism to engage in earnings management (Dechow, Sloan & Sweeney 1996). Additionally, there will be less pressure on management to meet short-term earnings expectations because controlling shareholders focus more on the long term. Thus, according to the efficient monitoring hypothesis ownership concentration limit earnings management. Ali et al. (2008) and Iturriaga and Hoffmann (2005) find that ownership concentration reduces the managers' discretionary behaviour.

However, firms with concentrated ownership may be subject to conflicts of interest between majority and minority shareholders. Large shareholders can exercise their control rights to create private benefits, sometimes expropriating minority shareholders (expropriation hypothesis). In fact, controlling shareholders may impose their personal preferences even if those preferences run contrary to those of minority shareholders (Shleifer & Vishny 1997). Therefore, large shareholders may intervene in the firm's management, and may encourage managers to engage in earnings management to maximise their private benefits (Jaggi & Tsui 2007). As managers fear negative

repercussions for declining performance from large shareholders, they may also have a strong motivation to engage in earnings management. Choi, Jean and Park (2004) and Kim and Yoon (2008) document that earnings management is positively related with ownership concentration.

Given this discussion, our hypothesis on the effect of ownership concentration on earnings management is non-directional and states:

Alternative Hypothesis (H2a): Ceteris paribus, higher ownership concentration in the firm is related to earnings management.

Institutional Ownership and Earnings Management

Agency theory suggests that monitoring by institutional ownership can be an important governance mechanism (the efficient monitoring hypothesis). In fact, institutional investors can provide active monitoring that is difficult for smaller, more passive or less-informed investors (Almazan, Hartzell & Starks 2005). Additionally, institutional investors have the opportunity, resources, and ability to monitor managers. Therefore, the efficient monitoring suggest that institutional ownership is associated with a better monitoring of management activities, reducing the ability of managers to opportunistically manipulate earnings. The efficient monitoring hypothesis suggests an inverse relationship between a firm's earnings management activity and its institutional share ownership. In this vein, several studies document that institutional ownership inhibits managers to opportunistically engage in earnings management (Bange & De Bondt 1998; Bushee 1998; Chung et al. 2002; Cornett et al. 2008; Ebrahim 2007; Koh 2003).

However, some argue that institutional investors do not play an active role in monitoring management activities (Claessens & Fan 2002; Porter 1992). According to Duggal and Millar (1999, p. 106), 'institutional investors are passive investors who are more likely to sell their holdings in poorly performing firms than to expend their resources in monitoring and improving their performance'. Institutional investors may be incapable of exerting their monitoring role and vote against managers because it may affect their business relationships with the firm. Accordingly, institutional investors may collude with management (Pound 1988; Sundaramurthy, Rhoades & Rechner 2005). It is also argued that institutional owners are overly focused on short-term financial results, and as such, they are unable to monitor management (Bushee 1998; Potter 1992). So, there will be a pressure on management to meet short-term earnings expectations. These arguments indicate that institutional investors may not limit managers' earnings management discretion and may increase managerial incentives to engage in earnings management (passive hands-off hypothesis).

In view of the different expectations regarding the effect of institutional ownership on earnings management, our hypothesis is non-directional and states:

Alternative Hypothesis (H3a): Ceteris paribus, the presence of institutional ownership in the firm is related to earnings management.

Variable Measurement and Research Design

Measuring Ownership Structure

As referred previously, to analyse whether a firm's ownership structure provide effective monitoring of earnings management, we use three variables: managerial ownership, ownership concentration and institutional ownership. The managerial ownership (*Managerial*) is calculated as the proportion of the company's shares directly or indirectly owned by the manager. Portuguese listed firms need to disclose the ownership levels of shareholdings in excess of 2%. Thus, ownership concentration (*Concentration*) is calculated as the proportion of stocks owned by shareholders who own at least 2% of the common stock of the company. Institutional ownership

(*Institutional*) is measured as an indicator variable taking the value 1 if there are institutional investors who own at least 2% of the common stock of the company, and 0 otherwise.

Measuring Earnings Management

Following standard accounting literature, we use discretionary accruals as a proxy for earnings management. Discretionary accruals are estimated using both the cross sectional variation of the Jones model (1991) and the cross sectional variation of the modified Jones model proposed by Dechow, Sloan & Sweeney (1995), that are commonly used by most of earnings management research (Caneghem 2002; Jaggi & Leung 2007; Klein 2002; Koh 2003; Liu & Lu 2007). Furthermore, recently some researchers have argued that current discretionary accruals are the most powerful models for estimating discretionary accruals among the existing models (Ashbaugh, LaFond & Mayhew 2003; Guay, Kothari & Watts 1996; Jaggi & Leung 2007).

The Jones' model consists of regressing total accruals (*TACC*) on two variables: the change in revenues (*ΔRev*), which models the normal component of working capital accruals; and the level of gross property, plant and equipment (*PPE*), included to control for the non-discretionary component of depreciation and amortisation expense, the main component of long-term accruals. Both variables and the intercept are divided by lagged total assets in order to avoid problems of heteroskedasticity. Non-discretionary accruals (*NDACC_Jones*) are the predictions from the ordinary least squares (OLS) estimation of model (1), while discretionary accruals (*DACC_Jones*) are the residuals.

The specific Jones model is as follows:

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

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.
ΔRev = change in revenues.
PPE = gross property, plant and equipment.
i,t = firm and year index.

The modified Jones model differs from the original Jones model in that the change in revenues is adjusted for the change in receivables (*ΔRec*). Non-discretionary accruals (*NDACC_ModJones*) are the predictions from the OLS estimation of model (2), while discretionary accruals (*DACC_ModJones*) are the residuals.

The modified Jones model is as follows:

$$\frac{TACC_{it}}{TA_{it-1}} = \alpha_1(\frac{1}{TA_{it-1}}) + \alpha_2(\frac{\Delta Rev_{it} - \Delta Rec_{it}}{TA_{it-1}}) + \alpha_3(\frac{PPE_{it}}{TA_{it-1}}) + \varepsilon_{it} \qquad (2)$$

Where,
TACC; TA; ΔRev*; PPE; i,t* = as defined previously.
ΔRec = change in accounts receivable.

Regression Models and Control Variables

We evaluate the association between ownership structure and earnings management by estimating the following OLS regression:

$$DACC_{it} = \beta_0 + \beta_1 (Managerial_{it}) + \beta_2 (Concentration_{it}) + \beta_3 (Institutional_{it}) + \varepsilon_{it} \quad (3)$$

Where:
$DACC_{it}$ = earnings management of firm i for period t by using two different proxies for earnings management: Jones model and the modified Jones model.
$Managerial_{it}$ = proportion of the company's shares directly or indirectly owned by the manager of firm i for period t.
$Concentration_{it}$ = proportion of stocks owned by shareholders who own at least 2% of the common stock of firm i for period t.
$Institutional_{it}$ = dummy variable: 1 if there are institutional investors who own at least 2% of the common stock of firm i for period t, and 0 otherwise.
ε_{it} = residual term of firm i for period t.
β_0 is a constant, β_1 to β_3 are the coefficients.

Given that the three ownership categories (M*anagerial*, *Concentration and Institutional*) are not the sole factors affecting earnings management, we also evaluate the association between ownership structure and earnings management, after controlling for the impact of other relevant variables. Several control variables are introduced to isolate other contracting incentives that may be influence managers' accounting choices. Previous studies suggest that political costs (*Size*), performance (*Performance*), leverage (*Lev*), board size (*Board*) and operating cash flows (*Cash flows*) are associated with earnings management (Dechow, Sloan & Sweeney 1995; DeFond & Jiambalvo 1994; Klein 2002).

The association between ownership structure and earnings management, controlling the impact of other relevant variables is estimated using the following OLS regression:

$$DACC_{it} = \beta_0 + \beta_1 (Managerial_{it}) + \beta_2 (Concentration_{it}) + \beta_3 (Institutional_{it}) + \beta_4 (Size_{it}) + \beta_5 (Performance_{it}) + \beta_6 (Lev_{it}) + \beta_7 (Board_{it}) + \beta_8 (Cash\ flows_{it}) + \varepsilon_{it} \quad (4)$$

Where:
$DACC_{it}$, $Managerial_{it}$, $Concentration_{it}$, $Institutional_{it}$ and ε_{it} = as defined previously.
$Size_{it}$ = logarithm of market value of equity of firm i for period t.
$Performance_{it}$ = average stock returns of firm i for period t.
Lev_{it} = ratio between the book value of all liabilities and the total assets of firm i for period t.
$Board_{it}$ = number of members of the board of the firm i for period t.
$Cash\ flows_{it}$ = ratio between the operating cash flows and the total assets of firm i for period t-1.
β_0 is a constant, β_1 to β_8 are the coefficients.

CONTROL VARIABLES EXPLAINED

Watts & Zimmerman (1978) suggest that larger firms may face greater political costs relative to small firms due to higher analyst following and investor scrutiny. Consequently, the political cost (size) hypothesis suggests that large firms are more likely to choose income-decreasing earnings management in order to reduce the probability of adverse impact from political exposure. Consistent with this hypothesis, Banderlipe (2009), Jiang, Lee & Anandarajan (2008) and Peasnell, Pope & Young (2000) find that larger firms are associated with lower absolute discretionary accruals. On the other hand, large firms may have more incentives to increase earnings because this can bring more benefit to their managers (Lobo & Zhou 2006). In addition, large firms face more pressures than small firms to meet or beat the analysts' expectations (Barton & Simko 2002). Chen,

Elder & Hsieh (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), Chen, Cheng & Wang (2010) and Shah, Zafar & Durrani (2009) provide evidence suggesting that firms with lower *performance* have higher behaviour of earnings management.

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 & 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. Chung et al. (2002), Paesnell, Pope & Young (2000), Park & Shin (2004) and Yang et al. (2008) find a negative relationship between leverage and earnings management.

Board size can affect boards' functions and potentially firm performance (Jensen 1993; Kiel & Nicholson 2003). The higher the number of members on the board; the greater the monitoring activity of management. If large boards enhance monitoring, they would be associated with less use of earnings management. In this vein, Chtourou, Bédard & Courteau (2001), Ebrahim (2007), Eisenberg, Sundgren & Wells (1998) and Xie, Davidson & DaDalt (2003) find that larger boards are associated with lower levels of discretionary accruals.

Chen et al. (2007), Dechow et al. (1995), DeFond & Jiambalvo (1994), Peasnell, Pope & Young (2000) and Yang et al. (2008) find that operating cash flows are negatively associated with discretionary accruals, suggesting that firms with strong operating cash flows are less likely to use discretionary accruals to engage in earnings management.

Sample Selection and Characteristics

The initial sample includes all companies whose stocks are listed, in the main market, in Euronext Lisbon. A total of 52, 50, 48, 51, 51 and 51 companies were listed at the year end of 2002, 2003, 2004, 2005, 2006 and 2007, respectively (303 firm-year observations in total). We select 2002 as the starting period because data on board structure are not available before 2002.

Foreign companies (2 in each of the six years, 12 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 (8, 6, 4, 7, 8 and 8 firms in 2002, 2003, 2004, 2005, 2006 and 2007, respectively). Companies (1 in each of the first four years) with missing data are also excluded. As a result, the final sample size is 34 non-financial companies per year and, thus, 204 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 managerial ownership, ownership concentration, institutional ownership, leverage, board size, operational cash flows, total assets, revenues, gross property, plant and equipment, receivables and net income are collected from the Annual Report and Corporate Governance Report. Both the Annual Report and Corporate Governance Report are available on-line at www.cmvm.pt. We obtain stock price data from the Euronext Lisbon, which allows measuring of the variables political costs (*Size*) and *Performance*.

Table 1 presents the sample descriptive statistics for the variables used in this research.

Table 1 shows that, while *DACC_Jones*, ranges between about – 87% and 69%, the mean and median are about -44% and -49%. The mean (median) *DACC_ModJones* is -44% (-48%), with a minimum of -66% and a maximum of -100%. On average, the sample firms have negative discretionary accruals. This may indicate that Portuguese firms are managing their earnings downwardly. The mean (median) managerial ownership (*Managerial*) is 5.6% (0.1%), with a minimum of 0.0% and a maximum of 60.6%. The difference between the mean and the median reveals a considerable skewed nature, suggesting the existence of large percentages of shares held by managers in some companies (as can be confirmed by the maximum of the variable). The ownership concentration (*Concentration*) variable shows that, on average, listed companies in Euronext Lisbon display a large degree of ownership concentration. Table 1 also shows that about

Table 1
Summary of Descriptive Statistics
Number of observations: 204; Period: 2002-2007

	Mean	Median	Min.	Max.
DACC_Jones	-0.439	-0.486	-0.866	0.687
DACC_ModJones	-0.438	-0.483	-0.661	-1.000
Managerial	0.056	0.001	0.000	0.606
Concentration	0.685	0.723	0.161	0.978
Institutional	0.642	1.000	0.000	1.000
Size	19.085	18.928	14.590	23.517
Performance	0.001	0.000	-0.004	0.035
Lev	3.200	1.841	0.176	19.744
Board	8.015	7.000	3.000	23.000
Cash flows	0.069	0.071	-0.197	0.308

DACC represents earnings management; *Managerial* represents the equity held by managers; *Concentration* represents the proportion of stocks owned by shareholders who own at least 2% of the common stock; *Institutional* dummy variable which takes a value 1 if there are institutional investors who own at least 2% of the common stock and 0 otherwise; *Size* represents the firm's size; *Performance* is the firm's performance; *Lev* represents the ratio between the book value of all liabilities and the total assets; *Board* is the number of members of the board; *Cash flows* is the ratio between the operating cash flows and the total assets.

64% of companies have institutional ownership (*Institutional*) as shareholders. The mean of political costs (*Size*) is about EUR 1.203 million with a minimum of EUR 2.170 thousand and a maximum of EUR 16.345 million. The mean and the median of *Performance* variable are 0.1% and 0.0%, respectively, with a minimum of -0.4% and a maximum of 3.5%. *Lev* variable represents on average 3.2 of the total assets of the company (with a median of 1.841). Board size (*Board*) is comprised of approximately 8 members (with a median of 7 members). *Cash flows* variable represents on average 6.9 of the total assets of the company (with a median of 7.1).

Table 2
Pearson Correlation Coefficients Matrix

	DACC_ Jones	DACC_ ModJones	Managerial	Concentration	Size	Performance	Lev	Board	Cash flows
DACC_Jones	1								
DACC_ModJones	-	1							
Managerial	-0.147*	-0.151*	1						
Concentration	-0.212**	-0.229**	-0,476**	1					
Size	0.561**	0.553**	-0,288**	-0,032	1				
Performance	-0.052	-0.069	-0,084	0,084	0,107	1			
Lev	0.186**	0.199**	0,120	0,002	-0,592**	-0,095	1		
Board	0.567**	0.591**	-0,121	-0,101	0,705**	-0,042	-0,324**	1	
Cash flows	-0.108	-0.069	-0,132	0,117	0,428**	0,045	-0,302**	0,248**	1

DACC represents earnings management; *Managerial* represents the equity held by managers; *Concentration* represents the proportion of stocks owned by shareholders who own at least 2% of the common stock; *Institutional* dummy variable which takes a value 1 if there are institutional investors who own at least 2% of the common stock and 0 otherwise; *Size* represents the firm's size; *Performance* is the firm's performance; *Lev* represents the ratio between the book value of all liabilities and the total assets; *Board* is the number of members of the board; *Cash flows* is the ratio between the operating cash flows and the total assets.

*** Correlation is significant at the 0.01 level (2-tailed); ** Correlation is significant at the 0.05 level (2-tailed).

The analysis of Table 2 shows that there are some significant correlations between the variables. *Managerial* and *Concentration* are negatively related with both *DACC_Jones* and *DACC_ModJones*, suggesting that earnings management is significantly lower for firms with

greater managerial ownership and higher ownership concentration. A negative correlation between *Managerial* and *Concentration* indicates that managers' equity interest in the firm is declining as ownership concentration increases. *Size* is positively correlated with both *DACC_Jones* and *DACC_ModJones*, suggesting that large firms have greater earnings management activity. *Managerial* is negatively correlated with *Size*, suggesting that managers' equity interest in the firm is declining as firm size increases. *Lev* is positively correlated with both *DACC_Jones* and *DACC_ModJones*, suggesting that an increase in leverage encourages managers to use more accruals to manage earnings to avoid debt covenant violation. *Size* is negatively associated with *Lev*, suggesting that larger firms have lower leverage constraint levels. A positive correlation between the *Board* and both *DACC_Jones* and *DACC_ModJones* indicates that as board size increases, boards become less effective at monitoring management. *Size* is positively correlated with *Board*, suggesting that large firms have greater board size. A negative correlation between *Lev* and *Board* indicates that firms with high leverage tend to have smaller boards. *Size* is positively correlated with *Cash flows*, suggesting that large firms have greater operating cash flows. A negative correlation between *Lev* and *Cash flows* indicates that firms with high leverage have lower cash flows from operations. A positive correlation between *Board* and *Cash flows* suggests that firms with greater board size have more cash flows from operations. Correlation coefficients are, in general, low (below the 0.9 threshold) (Tabachnick and Fidell, 2001), suggesting the absence of serious statistical problems related with multicollinearity.

Results and Discussion

Table 3 presents OLS regression estimates for equation 3 and equation 4 developed in the third section.

Table 3
OLS Regressions Results
Number of observations: 204, Period: 2002-2007

Dependent variable	**DACC_ Jones Model (3)**		**DACC_ Jones Model (4)**		**DACC_ ModJones Model (3)**		**DACC_ ModJones Model (4)**	
Independent variables	**Coef.**	**t test**	**Coef.**	**t test**	**Coef.**	**t test**	**Coef.**	**t test**
Constant	-0,213	-3,075***	-0,305	-4,274***	-0,211	-3,340***	-0,328	-4,861***
Managerial	-0,499	-4,056***	-0,189	-1,763*	-0,500	-4,268***	-0,222	-2,193**
Concentration	-0,345	-4,178***	-0,229	-3,339***	-0,348	-4,427***	-0,235	-3,621***
Institutional	0,059	1,996**	-0,017	-0,657	0,074	2,599***	-0,001	-0,045
Size			0,048	4,840***			0,039	4,192***
Performance			-2,952	-1,164			-3,338	-1,392
Lev			0,009	2,424***			0,006	1,797*
Board			0,015	3,516***			0,017	4,323***
Cash flows			-0,308	-1,802*			-0,388	-2,404***
R-squared	14,17%		44,52%		16,87%		46,94%	
Adjusted R-squared	12,89%		42,24%		15,62%		44,76%	
F-statistic	11,013***		19,558***		13,530***		21,568***	

DACC represents earnings management; *Managerial* represents the equity held by managers; *Concentration* represents the proportion of stocks owned by shareholders who own at least 2% of the common stock; *Institutional* dummy variable which takes a value 1 if there are institutional investors who own at least 2% of the common stock and 0 otherwise; *Size* represents the firm's size; *Performance* is the firm's performance; *LEV* represents the ratio between the book value of all liabilities and the total assets; *Board* is the number of members of the board; *Cash flows* is the ratio between the operating cash flows and the total assets.

*** Significant at the 1-percent level; ** Significant at the 5-percent level; * Significant at the 10-percent level.

The empirical tests of the main hypotheses examine the association between ownership structure and earnings management. Table 3 reports the results from equation (3) which examines the association between the three measures of the ownership structure and the two measures of earnings management. Additionally, Table 3 presents the results from equation (4) which also analyse whether a firm's ownership structure affects the levels of earnings management controlling the impact of other relevant variables.

Table 3 shows that, in all models, the managerial ownership is significantly negatively related to earnings management. Consistent with the alignment of interest hypothesis, this negative relationship suggests that the higher managerial ownership, the lower the magnitude of discretionary accounting accruals, which confirms the findings of Ali et al. (2008), Banderlipe (2009), Dhaliwal et al. (1982), Ebrahim, (2007), Klein (2002) and Warfield et al. (1995).

As in Ali et al. (2008) and Iturriaga & Hoffmann (2005), we find, in all models, a negative relationship between ownership concentration and earnings management, suggesting that earnings management is significantly lower for firms with higher ownership concentration. This result corroborates the efficient monitoring hypothesis which suggests that large shareholders reduce the scope of managerial opportunism.

In model (3) the coefficient institutional ownership variable is positive and significant, consistent with the passive hands-off hypothesis which suggests that institutional investors may increase managerial incentives to engage in earnings management. However, this result is not corroborated in model (4). In reality, in model (4) the coefficient on institutional ownership is negative, but not statistically significant. Thus, it is not possible to conclude that firms having institutional ownership have higher flexibility to use accruals to manage earnings.

Regarding the other variables, included as control variables, we find, in all models, that earnings management is significantly higher for firms with greater political costs (*Size*). *Lev* is significantly positive, in all models, providing evidence that an increase in leverage encourages managers to use more accruals to manage earnings to avoid debt covenant violation, confirming the prediction and results of DeFond & Jiambalvo (1994) and Jiang et al. (2008). As in Kao & Chen (2004), we document, in all models, a positive relationship between the *Board* and the earnings management, suggesting that the higher the number of the directors on the board the greater is the likelihood to use accruals to manage earnings. This result seems to indicate that small boards might be more effective in monitoring managerial behaviour. Finally, the results suggest, in all models, that earnings management is significantly lower for firms with greater operating cash flows.

Results suggest no evidence that firm performance affects the levels of earnings management.

Summing up, the results reveal that while managerial ownership, ownership concentration and operating cash flow alleviate earnings management, the political costs, leverage and board size exacerbate the levels of discretionary accruals.

Sensitivity Analyses

To ensure the robustness of our results, we perform several sensitivity checks. The first sensitivity analysis examines the effect of influential observations on results. Where outliers are found (namely in the variables *Managerial*, *Board*, *Lev* and *Performance*), a winserization 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) do not differ from results presented previously in Table 3. Thus, the influential observations do not affect the results.

The next sensitivity analysis examines the effects of board composition on discretionary accruals. Extant literature indicates that board composition and accruals are negatively correlated (Benkel, Mather & Ramsay 2006; Cornett et al. 2008; Peasnell, Pope & Young 2000). The *Board Composition* variable is introduced to examine the robustness of the results found in the fifth section of this paper. The *Board Composition* variable is calculated by dividing the number of non-

executive directors by the total number of board members. The unreported results of these tests are qualitatively the same as those observed in the earlier section. All the estimated coefficients for *Managerial*, *Concentration* and *Institutional* retain their significance level and have the same signs. The *Board Composition* is significantly negatively related to earnings management, which suggests board composition is effective in deterring managers' opportunistic earnings management.

Sloan (1996) finds evidence of a concave relation between firm size and total accruals. Thus, equation (3) and equation (4) are re-estimated by including an additional variable, $Size^2$, to examine whether there is a size effect in the relationship between ownership structure and earnings management. Both *Size* and $Size^2$ are statistically positive. All the results (not reported) are qualitatively the same as the main findings where the three measures of ownership structure retain their significance level and have the same signs. Thus, the observed impact of the ownership structure on earnings management is unlikely to be a size effect.

Ding, Zhang & Zhang (2007) find evidence of a non-linear relationship between ownership concentration and earnings management. Accordingly, equation (3) and equation (4) are re-estimated by including the squared *Concentration* ($Concentration^2$), to examine the possibility that the relationship between concentration and earnings management may be non-linear. The results (not reported) are qualitatively the same as the main findings. The coefficient of $Concentration^2$ variable is not statistically significant. Thus, no evidence suggests that the relationship between ownership concentration and earnings management is non-linear.

The above analyses indicate that the results of this paper are robust after controlling the effect of influential observations, the effect of board composition, different specification of the relation between *Size* and earnings management and different specification of the relation between *Concentration* and earnings management.

Summary and Conclusions

Previous studies have indicated that ownership structure has an impact on corporate accounting behaviour (Banderlipe 2009; Chung et al. 2002; Dechow, Sloan & Sweeney 1996; Klein 2002; Kim & Yoon 2008; Mitani 2010; Warfield et al. 1995).

Therefore, the aim of this paper is to examine the effect of ownership structure on a firm's earnings management activity, within the Portuguese capital market. For this reason we selected a sample of 34 firms listed in Euronext Lisbon from 2002 to 2007 (204 firm-year observations). The empirical findings suggest that the earnings management practices of Portuguese listed firms are influenced by these firms' ownership structure. Specifically, our study shows that both managerial ownership and ownership concentration inhibit earnings management. This result is consistent with both the alignment of interest hypothesis, which suggests that managers who own a significant portion of the equity in a firm have less incentive to manipulate reported accounting information, and the efficient monitoring hypothesis, which suggests that large shareholders reduce the scope of managerial opportunism.

Moreover, the results also reveal that there is less earnings management when operating cash flows are high and that there is more earnings management when political costs, leverage and board size are high.

In sum, our findings highlight the importance of ownership structure, mainly managerial ownership and ownership concentration, in constraining the likelihood of earnings management in Portugal. Therefore, our study indicates that both managerial ownership and ownership concentration affect the informational quality of earnings positively, and consequently enhance the quality and value relevance of published financial data.

The findings of this study make the following contributions. First, the results indicate that, on average, managerial ownership and ownership concentration provide effective monitoring of earnings management in Portuguese listed firms. Second, the findings are relevant for countries with an institutional environment (mainly concentrated ownership) similar to that of Portugal.

Finally, investors may also benefit from the findings because they provide insight into the impact of ownership structure on earnings quality.

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