

The Effect of Audit Committee Characteristics on Earnings Management: Evidence from the UK

Abstract

This study examines the impact of audit committee characteristics on earnings management, of FTSE 350 companies, for the fiscal years 2006 and 2007. Number of members and meetings, independence, directors' remuneration, outside directorships, various types of financial expertise, ownership, regulated sector and the listing on FTSE 100 are investigated. No significant association between absolute discretionary accruals and these characteristics are found, apart from the regulated industry. The results for signed discretionary accruals show that some characteristics have an effect on either upward or downward earnings management. This reveals the importance to distinguish between audit committees effectiveness on constraining upward and downward earnings management

This paper explores some qualitative AC's characteristics which have not previously been examined. Additionally, it is probably the first to examine the effect of several AC characteristics on EM in the UK context.

The findings of this study provide useful insights for regulators in order to improve and reconsider the current regulations on ACs' mechanisms. The findings of generally ineffectual ACs in the UK, along with many similar findings from other countries (see Xie et al., 2003 and Baxter & Cotter, 2009) raise concerns about the current situation of the regulation and the composition of ACs. External auditors are warned from relying on the form rather than substance of ACs.

Keywords: Earnings management, Audit committee characteristics, Combined Code, Corporate governance, Financial expert, Regulated industry sectors, FTSE.

1. INTRODUCTION

This paper examines the relationship between audit committees (ACs) and earnings management (EM) in the UK. Two key aspects of this relationship are examined: the characteristics and various types of financial expertise of ACs. EM is measured based on the performance adjusted discretionary current accruals model developed by Kothari et al. (2005).

Stock market regulators and other investor protection agencies in the UK, as well as around the world, are concerned that EM has caused many of the major financial crises of the last few decades. EM has undermined investor's confidence and trust in capital markets. In response, regulators, including the financial markets authority in the UK, have introduced mechanisms to constrain managers' opportunistic behaviour and to ensure high quality financial reporting, resulting in an increasing emphasis on corporate governance (CG) practice. As part of a company's CG, the AC's main duty is to ensure the protection of shareholder interests, through overseeing the firm's financial reporting. Thus, one of the AC's main tasks is to prevent manipulation of earnings by management.

Motivated by the recent regulatory emphasis on the responsibility of ACs in strengthening CG practice and enhancing financial reporting quality (Sarbanes-Oxley 2002, Corporate Governance Combined Code 2006), this paper examines the relationship between AC characteristics and EM for the top 350 listed firms on the London Stock Exchange for 2006 and 2007. In particular, this paper empirically investigates if recent regulatory changes relating to ACs in the UK have contributed to an improvement in financial reporting quality.

A considerable number of studies investigate the effectiveness of ACs on financial reporting quality in the US (eg Xie et al., 2001; Klein, 2002; Abbott et al., 2004; Yang & Krishnan, 2005; Lin et al.,

2006), in Australia (Davidson et al., 2005; He et al., 2007; Wong et al., 2007; Baxter & Cotter, 2009) and in the UK (Peasnell et al., 2000, 2005). Nevertheless, this paper makes a unique contribution to the literature in three ways.

First, the bulk of previous research concentrates on quantitative AC's characteristics. In contrast, this study aims to investigate as broadly as possible the effect of AC's characteristics on EM. Consequently, qualitative factors previously unexamined, such as the professional qualifications of AC members are explored. The following characteristics are examined: number of members and meetings; independence; directors' remuneration; average number of outside directorships; various financial expertise; AC members' ownership; regulated industry sector; and listing on the FTSE 100.

Second, this research provides a novel contribution to CG and EM literature as it is probably the first to examine the effect of several AC characteristics on EM in the UK context. In terms of the dependent variable, this research represents the first attempt to measure EM in UK firms using a performance adjusted discretionary accruals methodology. In addition, it extends the very limited research on AC size and diligence by examining the effects on EM in the UK. Furthermore, it tests the effectiveness of the UK Corporate Governance Code (2003) which introduced AC expertise as a new recommendation. This research conducts the first examination of the relationship between CG mechanisms and the extent of EM practice in the UK, since the 2003 Combined Code was introduced. The paper sheds light on the effectiveness of the recent CG recommendations on enhancing reporting quality in the UK.

Studies that examine the presence of an AC, such as those of Peasnell et al. (2005), Osma and Nogueira (2007), Siregar and Utama (2008), Baxter and Cotter (2009) and Lo, Wong and Firth (2010),

produce inconclusive and conflicting results. Furthermore, UK-focused research (Peasnell et al., 2000, 2005) merely examines the presence of an AC.

Third, the literature is primarily focused on the experience in the US. There is little research into the relationship between CG mechanisms and managers' engagement in EM in the UK, (exceptions are Peasnell et al., 2000, 2005). Hofstede (2001) documents that while the UK and the US are similar in many respects, various organisational differences exist. In terms of CG recommendations, numerous international accounting research reports have identified a number of differences in the structure and composition of boards, executive compensation levels and AC functions (Monks & Minow, 2004; Coffee, 2005; Ferguson et al., 2004). Furthermore, both CG and the notion of EM are different in the two countries. Brown and Higgins (2001) argue that the extent to which US managers manage earnings is significantly higher than that by their counterparts in the UK. Thus, it is deemed useful to extend previous empirical evidence by reference and comparison to the UK context.

For the pooled sample, the results of this study indicate that the examined explanatory variables have no impact on the absolute discretionary accruals apart from the regulated industries, which yields a positive association with EM. Thereafter, the sample data is split into upward and downward EM since managers are motivated to either increase or decrease the earnings. While most AC characteristics seem to have no effect on the absolute magnitude of EM, a number of variables have a significant effect on either upward or downward EM. This highlights the importance of distinguishing between ACs effectiveness on constraining upward and downward EM. The findings also imply that the qualitative AC characteristics studied are less significant in relation to EM than commonly used quantitative characteristics of ACs, such as AC meeting frequency, independence and size.

The paper is organised as follows: The next section provides an overview of the background, a literature review and develops the hypotheses. The data sourcing and the methodology are explained in the third section. The fourth section presents the results including descriptive statistics, correlation analysis, regression results and discussion, and robustness checks. Finally, the last section summarises this research, and comments on the limitations of the study, implications for regulators and further research suggestions.

2. BACKGROUND, LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

This section starts with a brief introduction on the role of ACs, its development in the UK, the requirements regarding its composition and its main tasks according to the Combined Code. The relevant research literature is critically reviewed and nine hypotheses developed.

2.1 Audit Committees in the UK

Due to strong competition in the financial markets, a company needs mechanisms to control management in order to constrain agency costs and, hence, maintain the company's competitiveness (Fama & Jensen, 1983). This task is assigned to the AC, which is a sub-committee of the board of directors and hence, is responsible for overseeing the financial reporting and internal controls as presented in the annual report and accounts (Combined Code, 2003). Empirical evidence shows that effective CG can help to reduce agency costs, thereby assuring that the management employs the firm's resources in the best interests of the shareholders (Lin & Hwang, 2010). In 1992, the Cadbury Committee recommended that all listed companies should implement an AC, which consequently led to the widespread acceptance of ACs in the UK. Prior to 1970, not a single UK listed company had an AC; by 1991 around a fifth of listed companies had established an AC. In the two years following the Cadbury Committee Report around 60% of companies had ACs (Collier, 1996). According to the Higgs Report (2003, p. 16), the majority of UK listed companies have an AC, with only a single

FTSE 100 company without one. Outside the FTSE 350, 15% of the listed companies do not have an AC.

The Combined Code grants a special role to the AC in the company's CG: "While all directors have a duty to act in the interests of the company the AC has a particular role, acting independently from the executive, to ensure that the interests of shareholders are properly protected in relation to financial reporting and internal control" (2003, p. 45). According to section C.3 of the Combined Code the AC's main tasks include:

- Monitoring the integrity of the financial statements and financial disclosures;
- Reviewing important financial judgements;
- Reviewing the internal financial controls (risk management);¹
- Monitoring and reviewing the firm's internal audit effectiveness; and
- Monitoring and reviewing the independence and objectivity of external auditors and, the audit process's effectiveness (2003, pp. 16-17).

The Combined Code requires that the AC of companies listed on the FTSE 350 contain at least three independent non-executive directors, which is stricter than the rules of section 7 of the Financial Statement Authority disclosure and transparency rules, requiring only at least one independent member. Additionally, the Code also requires that the company's chairperson is not a member of the AC.² Furthermore, the Code requires that at least one member should possess "recent and relevant financial experience" (2003, p. 16). The Smith Guidance (2003, p. 50) recommends that this member should hold a qualification from one of the professional accountancy bodies.

¹ Unless there is no separate and appropriate risk committee implemented.

² For smaller companies i.e. listed below FTSE 350 the rules are less strict. The AC should consist of at least two independent non-executive directors. The company's chair may be a member of the AC but not its chair.

2.2. Previous Research and Hypotheses

2.2.1. Audit committee size

There is considerable debate among researchers over if larger or smaller ACs are the most effective in preventing EM. Bédard et al. (2004) argue that the larger the AC, the more likely it is to uncover and resolve potential problems in the financial reporting process because it is likely to provide the necessary strength and diversity of views and expertise to ensure effective monitoring. Whereas, Xie, Davidson and DaDalt (2003) analyse a sample of 282 firm-year observations in the years 1992, 1994 and 1996 and find no significant association between the number of AC members and discretionary accruals. Using a different methodology for EM measurement and sample selection, Bédard, Chtourou and Courteau (2004) also find no relationship in a sample of 300 US companies in 1996. In contrast, the results of Yang and Krishnan (2005), analysing a sample of 896 firm-year observations of 250 randomly drawn US firms for the years 1996-2000, show a significantly negative relation between the AC size and quarterly EM. Lin and Hwang (2010), employing meta-analytic techniques to the data from nearly 50 empirical studies, also find a negative and highly significant association.

This implies that a minimum number of members could prevent EM and leads to the first hypothesis:

H1: There is an association between the number of AC members and EM.

2.2.2. Audit committee number of meetings

The Smith Guide (2003) requires that ACs meet no fewer than three times during the year. Research again shows ambiguous results regarding the relationship of the number of meetings and EM. Thus, Bédard et al. (2004) find an insignificant relationship, a study by Yang and Krishnan (2005) fails to find a significant association, and a study by Baxter and Cotter (2009), which analyses the earnings quality of Australian companies in 2001 (prior to the mandatory adoption implementation of ACs in

2003), agrees. However, Xie et al. (2003) find a significant negative influence in relation to the number of meetings on EM. As do Ebrahim (2007) in a sample of 2,360 firm-year observations of US manufacturing companies for the years 1999-2000 and Lin and Hwang (2010) using the empirical data from nearly 50 studies. Following the discussion, the second hypothesis is stated as:

H2: There is an association between the number of AC meetings and EM.

2.2.3. Audit Committee members' independence

The independence of non-executive directors sitting on the AC is seen as one of the crucial factors contributing towards the effectiveness of CG (Collier, 1996). Its importance is also highlighted by the Combined Code (2003), which requires that the AC should consist of at least three independent directors. Furthermore, the Code requests that the company's chairman is not a member of the AC.

Xie et al. (2003) find that AC membership independence is not significantly negatively associated with EM. However, the majority of studies indicate that AC independence helps to mitigate EM. Thus, Klein (2002), using a sample of 692 firm-year observations drawn from the S&P 500 in the years 1992 and 1993, documents a negative relationship between ACs in which the majority of members are independent and EM. In addition, Bédard et al. (2004) find in their sample of French companies, a significantly negative association between fully independent committees and discretionary accruals. Chang and Sun (2009) compares AC characteristics of 89 cross-listed foreign companies in the US ex-ante and ex-post the adoption of the Sarbanes-Oxley Act (SOX) in the years 2002 and 2003. Their results unveil no relationship between independence and EM before SOX but a significant negative impact after the adoption. Lin and Hwang (2010) find a negative and highly significant association between the two variables. A meta-analysis study by García-Meca and Sánchez-Ballesta using the data of 35 empirical studies, concludes that independence is "one of the

major corporate governance mechanisms in constraining EM” (2009, p.607). Thus, the third hypothesis is:

H3: Companies with fully independent ACs (all non-executive directors are independent and the Chairman is not a member of the AC) exhibit less EM than companies with an AC that is not fully independent.

2.2.4. Audit committee directors’ remuneration and outside directorship

Generally, non-executive directors are appointed to work part-time on a firm’s board. The market for experienced directors is highly competitive, meaning effective directors can be highly paid (Habbash et al., 2010). Thus, Fairchild and Li (2005) argue that high quality directors hold more multiple directorships than average directors and are more selective in undertaking new appointments. In an earlier study, Kaplan and Reishus (1990) reveal that managers from poorly performing US firms (measured by dividend cuts) have significantly less outside directorships than those from better performing companies. They suggest that managers with more appointments have more time for their duties because their own company is performing well. These findings are supported by Ferris, Jagannathan and Pritchard (2003), while Yang and Krishnan (2005) find that outside director of ACs members have a negative impact on EM.

Adams and Ferreira (2008) analyse the association between meeting fees and attendance in a sample of around 10,500 firm-year observations for US listed companies in the years 1996-2003. They focus on the attendance problem of directors, which may arise, for example, when they hold multiple directorships. Their results indicate that a higher remuneration leads to an increase in attendance and hence, they conclude that highly paid outside directors are more dedicated to their position. Likewise, Engel, Hayes and Wang (2010) find that higher compensation has a positive impact on the AC members’ expertise. Habbash et al. (2010) agree that highly paid non-executive directors on the AC

are more committed, work more effectively and hence, have higher incentives to monitor management. Their results reveal a significantly negative association between the outside directors' fees and discretionary accruals. Based on the discussion, the next hypotheses are:

H4: There is a negative association between the average number of outside directorships held by AC members and EM.

H5: There is a negative association between the average remuneration of AC members and EM.

2.2.5. Audit committee members' ownership

Empirical evidence again shows inconclusive results. Agency theory states that the separation of ownership and control leads to a conflict in interest between shareholders and management (Jensen & Meckling, 1976). Therefore, managers with a lower ownership of the company have less motivation to exaggerate the company's real performance than managers with larger stakes. However, Wright (1996) suggests that ownership by AC members may reduce their independence. Likewise, Yang and Krishnan (2005) find a significant positive association between EM and the ownership of both non-independent and independent members. Based on the discussion, the sixth hypothesis is:

H6: There is an association between level of stock ownership by AC members and EM.

2.2.6. Financial expertise

As previously highlighted, the Combined Code requires that at least one of the AC members possess relevant and recent financial experience. In this context, the Smith Guidance suggests the qualification should be from a professional accountancy body. Several studies investigate the effects of board members' expertise but each uses different definitions. Xie et al. (2003) classify non-executives directors according to their previous employment (i.e. financial background, investment firm, bank, legal, and blockholder directors). The results indicate no significant relationship between financial expertise and EM. However, the researchers do not analyse if the members are financial

managers (such as a CFO, controller or treasurer) or qualified accountants. More recent studies overcome this weakness. For instance, Chang and Sun (2009) use a dummy variable for financial experts if at least one of the AC members possesses accounting experience. Their results indicate a marginally significant negative association between the presence of financial experts on the AC and EM. Bédard et al. (2004) find similar results for French listed companies, as do Lo, Wong and Firth (2010) when analysing a sample of 266 firms listed on the Shanghai stock exchange. Other research such as Chen, Elder and Hsieh (2007) and Lin and Hwang (2010) find similar results. Based on these arguments, the hypothesis is stated as:

H7: There is a negative association between the presence of a financial expert in the AC and EM.

2.2.7. Regulated sectors and FTSE 100 listing

Prior, Surroca and Tribó (2008) argue that managers of firms in highly regulated sectors suffer acute pressure from antitrust authorities regarding price controls and market share. They use a sample of more than 590 companies in 26 countries for 2002-2004. They find that managers try to compensate the negative impact of EM through corporate social responsibility activities. This result is more significant for regulated sectors which are under close political scrutiny, can accrue economic benefits by reporting lower earnings to regulators (Burgstahler & Dichev, 1997) and have incentives to manage both income statements and balance sheet accounts that are of interest to regulators (Healy & Whalen, 1999). Following Prior et al. (2008), we considered industry classification benchmark (ICB) sectors 1000 (oil & gas), 4000 (healthcare) and 9000 (technology) as regulated.

An essential aspect not yet covered by research is the relationship between the magnitude of discretionary accruals and listing on a particular index. Investigating the index may capture the market interest in a company through the trading volumes or level of analyst coverage over a specific period.

Arguably companies listed on the FTSE 100 exhibit less earnings manipulation than companies listed on the FTSE 250, as the former are under more intense scrutiny by analysts. Conversely, companies listed on the FTSE 100 the intense coverage may encourage earnings manipulation in order to meet or beat forecasts. Consequently, it is hard to predict if there is a negative or positive association between the listing and EM. Therefore, the final hypotheses are:

H8: There is a positive association between regulated industry sectors and EM.

H9: There is an association between the listing on the FTSE 100 and EM.

3. RESEARCH METHODOLOGY

3.1. Data Sourcing

The initial sample includes all companies listed on the FTSE 350 (a combination of the FTSE 100 and FTSE 250 indices, which represent approximately 81% and 15% respectively of the UK equity market) (FTSE, 2010) during the financial years 2006 and/or 2007. The years were chosen to ensure consistency in the EM, as the calculation of discretionary accruals requires the previous year's financial data and because IFRS was only adopted in 2005. Later years are not considered because of possible distortions caused by the financial crisis in September 2008.

INSERT TABLE 1 ABOUT HERE

The financial data, including the companies' income statements, balance sheets and cash flow statements, was retrieved from the *Thomson Reuters DataStream*. CG data was manually collected from the firms' annual reports and accounts or from separately disclosed directors' reports. Several observations are excluded (see Table 1). Firms that are listed more than once with different shares are removed since the financials are the same. Furthermore, following previous research (e.g. Yang & Krishnan, 2005; Chang & Sun, 2009; Habbash et al., 2010), companies with the ICB Industry-Code

7000 (Utilities) and 8000 (Financials) are removed due to their particular accounting practices which means that the discretionary accruals model does not apply (see Peasnell et al., 2000). Also, companies with missing financial or CG data are also excluded. Furthermore, due to insufficient observations to estimate the industry coefficient, firms within the ICB Industry-Code 6000 (Telecommunications) are excluded. The final sample was 185 firms in 2006 and 207 firms in 2007 (see Table 2 for details).

INSERT TABLE 2 ABOUT HERE

3.2. Dependent Variable Measurement

Recent studies in EM, such as Prior et al. (2008) and Sun, Salama, Hussainey and Habbash (2010), favour the performance-matched accrual measure proposed by Kothari et al. (2005) to measure discretionary accruals. This includes (lagged) return on assets in order to diminish the problems with heteroscedasticity and/or misspecification issues arising with other models.

Total accruals ($TACC_{jt}$) of firm j in the year t are calculated as the difference between earnings before extraordinary items and discontinued operations ($EARN_{jt}$) and net cash flow from operations (CFO_{jt}):

$$TACC_{jt} = EARN_{jt} - CFO_{jt} \quad (1)$$

The industry sectors' estimate for all firms within the same ICB code is computed for the years 2006 and 2007. Using the modified Jones model as per Kothari et al. (2005, p. 174), total accruals are scaled by lagged total assets ($TA_{j,t-1}$) and regressed against its components including an intercept (see

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$$\frac{TACC_{jt}}{TA_{jt-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{TA_{jt-1}} \right) + \alpha_2 \left(\frac{\Delta SALE_{jt} - \Delta REC_{jt}}{TA_{jt-1}} \right) + \alpha_3 \left(\frac{PPE_{jt}}{TA_{jt-1}} \right) + \alpha_4 ROA_{jt-1} + \varepsilon_{jt} \quad (2)$$

Where

$TACC_{jt}$ = total accruals for firm j in the year t

TA_{jt-1} = total assets for firm j at end in the year $t - 1$

$\Delta SALE_{jt}$ = change in sales for firm j in year t from year $t - 1$

ΔREC_{jt} = change in accounts receivables for firm j in year t from year $t - 1$

PPE_{jt} = property, plant and equipment for firm j at the end of year t

ROA_{jt-1} = return on assets for firm j at end of the year $t - 1$

(net income divided by lagged total assets)

ε_{jt} = residuals

The change in sales in equation 2 is adjusted by the change in accounts receivables to avoid endogenous bias (Jeter & Shivakumar, 1999). Using the estimated coefficients α_0 , α_1 , α_2 , α_3 and α_4 for each ICB sector obtained from equation 2, the firms' non-discretionary accruals (NDACC_{jt}) are calculated:

$$NDACC_{jt} = \alpha_0 + \alpha_1 \left(\frac{1}{TA_{jt-1}} \right) + \alpha_2 \left(\frac{\Delta SALE_{jt} - \Delta REC_{jt}}{TA_{jt-1}} \right) + \alpha_3 \left(\frac{PPE_{jt}}{TA_{jt-1}} \right) + \alpha_4 ROA_{jt-1} \quad (3)$$

Firms' discretionary accruals are obtained by subtracting non-discretionary accruals (equation 3) from total accruals (equation 2):

$$DACC_{jt} = TACC_{jt} - NDACC_{jt} \quad (4)$$

$$ADACC_{jt} = |DACC_{jt}| \quad (5)$$

Following previous research, the magnitude of absolute discretionary accruals (ADACC) is used as proxy for EM. The reason why absolute—i.e. unsigned discretionary accruals—are chosen is that managers are manipulating earnings in both directions: downward and upward (Sun et al., 2010; Habbash et al., 2010).

3.3. Explanatory Variables

Table 3 summarises the explanatory variables, providing brief definitions and indicating which hypothesis is tested by which variable. All required information is manually collected from annual reports and accounts or from separately disclosed director's reports, except for the variables REGULATED and FTSE100 along with control variables, which are taken from *DataStream*. Most variables are self-explanatory, although a number require explanation in order to make the results comparable to previous research:

- FULLYIND: The independence of the AC members is collected from the annual reports. However, many companies declare their non-executive directors as independent even if their profile does not comply with the independence criteria of the Combined Code (2003, A.3.1, p. 11). Therefore, the independence is corrected if, for example, a member has served more than nine years as a director. Further, the company's chairman should not be an AC member.³ In this case, the AC is not seen as fully independent.
- SQ_AVGCD: The number of current outside non-executive director assignments and full-time employments are collected from the board of directors' presentation in the annual reports.
- LN_AVGFEES: Fees for members that have been assigned/resigned during the year have been adjusted in order to prevent an excessively low/high average.
- ACCEXP: Following Bédard et al. (2004), this paper does not consider CEO experience as accounting experience. Arguably, CFOs, due to the technical accounting skill set inherent in their role, are in a better position to detect EM than a CEO.
- OTHPQ: This includes relevant financial and management qualifications such as corporate treasurer, CFA or CMI.
- EXPERT: This dummy variable indicates that at least one of the members can be seen as a financial expert, through holding a professional accounting qualification (ACCPQ) and possessing either accounting (ACCEXP) or audit experience (AUDIT).
- REGULATED: Following recent research (e.g. Prior et al., 2008, Habbash et al., 2010), the industry sectors are divided into regulated (dummy variable 1) and unregulated (dummy variable 0). The regulated sectors are oil and gas, health care, and technology.

INSERT TABLE 3 ABOUT HERE

³ In smaller companies (i.e. listed below FTSE 350) the company's chairman might be a member but not the chairman of the audit committee (Combined Code, 2003, p. 12).

3.4. Control Variables

As indicated by previous studies, certain other factors can influence the magnitude of EM (Sun et al., 2010). Therefore, the following control variables, which are found in other research, are included in the models: firm size; leverage; cash flow from operations; and return on assets (see Table 4 for further details).

INSERT TABLE 4 ABOUT HERE

3.5 Model Specifications

These explanatory and control variables are combined into two models in order to test the hypotheses. The first model is:

$$\begin{aligned} ADACC = & \beta_0 + \beta_1 FULLYIND + \beta_2 OWN + \beta_3 LN_MEETINGS + \beta_4 LN_MEMBERS \\ & + \beta_5 LN_AVGFEEES + \beta_6 SQ_AVGCD + \beta_7 EXPERT + \beta_8 FTSE100 \\ & + \beta_9 REGULATED + \beta_{10} LN_FSIZE + \beta_{11} LEV + \beta_{12} CFO + \beta_{13} ROA \end{aligned}$$

In the second model, the explanatory variable for the financial expert (*EXPERT*) is replaced by the different qualifications and experiences (*ACCPQ*, *ACCEXP*, *ACCGRAD*, *OTHPQ* and *OTHGRAD*) and is:

$$\begin{aligned} ADACC = & \beta_0 + \beta_1 FULLYIND + \beta_2 OWN + \beta_3 LN_MEETINGS + \beta_4 LN_MEMBERS \\ & + \beta_5 LN_AVGFEEES + \beta_6 SQ_AVGCD + \beta_7 ACCPQ + \beta_8 ACCEXP \\ & + \beta_9 AUDEXP + \beta_{10} ACCGRAD + \beta_{11} OTHPQ + \beta_{12} OTHGRAD \\ & + \beta_{13} FTSE100 + \beta_{14} REGULATED + \beta_{15} LN_FSIZE + \beta_{16} LEV + \beta_{17} CFO \\ & + \beta_{18} ROA \end{aligned}$$

4. RESULTS

4.1. Descriptive Analysis

The descriptive statistics are reported in *خطا! لم يتم العثور على مصدر المرجع.* The analysis focuses on the pooled data for 2006 and 2007 since this data is used in the regression models. The descriptive statistics show that the sample mean absolute discretionary accruals (ADACC) estimation as a proxy for EM has a mean of 6.9%, comparable with recent UK studies such as Sun et al. (2010) with 6.4%. Regarding the ACs' characteristics, on average the AC has approximately 3.5 members (MEMBERS) and meets on average 4 times (MEETING) during the year. The standard AC member's remuneration (AVGFEEES) is £49,629 per annum. Each member holds on average 1.7 outside directorships (AVGCD). The directors own (OWN) 0.07% of the shares.

Further, 67.3% of the ACs fulfil the requirement of full independence (FULLYIND) and 59.4% have at least one member who can be considered a financial expert (EXPERT). 67.3% of the ACs have at least one member that possesses a professional qualification (ACCPQ) and 76.0% have at least one member that has practical accounting experience (ACCEXP). 24.5% of the committees have a member with audit experience (AUDEXP). Further, 21.9% have a member with a relevant degree other than accounting (OTHGRAD). Surprisingly, only 2.6% of the ACs have a member with an academic accounting degree (ACCGRAD) and 7.7% with other professional financial or management qualifications (OTHPQ). However, this information may not be disclosed because companies may not consider it as beneficial. Due to their low mean, neither dummy variable is included in the regressions.

The average firm size (FSIZE) measured by total assets is £4,410.8m while the sample ranges from £33m to £134,000m. Due to these differences in firm size, a natural logarithm is used in order to mitigate the effect of outliers. 22.2% of the sample's total assets are debt financed (LEV). The

average cash flow from operations (CFO) and the return on assets (ROA) are 12.1% and 8.4% respectively of the total assets.

4.2. Correlation Analysis

The correlation table with all the variables is presented in **خطأ! لم يتم العثور على مصدر المرجع.** As expected, the results show that absolute discretionary accruals (ADACC) are negatively correlated with the number of members (LN_MEMBERS, -8.8%). However, they show no significant relationship with other explanatory variables apart from in the regulated sectors. Furthermore, the results indicate a negative association between ADACC and firm size (LN_FSIZE, -10.1%). This may indicate that larger companies are, in general, more prudent in managing their earnings since they are under a higher degree of analyst scrutiny. The results also reveal a negative association between ADACC and financial leverage (LEV, -10.3%). This may indicate that companies with higher leverage are becoming more prudent with the manipulation of their financials due to the examples of companies such as Enron and Worldcom that crashed because of accounting manipulation. These arguments are supported by the fact that the presence of financial experts on the AC and the level of leverage exhibit a positive relationship (12.2%), while the presence of a financial expert and the cash flow from operations is negatively correlated (CFO, -9%). It might also indicate that poorly performing companies see more necessity in employing financial experts to monitor their financials in order to increase the creditability of their financial disclosures.

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4.3. Regressions Results and Discussion

خطأ! لم يتم العثور على مصدر المرجع. provides the panel data regressions. Following the recommendation of econometric literature, robust standard errors are used since panel data engage both cross-sectional and time dimension and hence have, in most cases, heteroscedasticity and autocorrelation, respectively (Gujarati, 2003, p. 652).

The results of the first model reveal that most of the explanatory variables exhibit no significant relationship with ADACC. The results show no significant impact of the number of members (LN_MEMBERS) and meetings (LN_MEETINGS) on the absolute EM level. Results from other studies (e.g. Bédard et al., 2004) also fail to find these associations. The full independence of the AC (FULLYIND) also appears to have no impact on EM, supporting the findings of Xie et al. (2003). The results in this study reveal no relation between the ADACC and remuneration (LN_AVGFEEES) or outside directorships (SQ_AVGCD). Further, consistent with Peasnell et al. (2005), this study fails to find an association between directorial ownership (OWN) and EM. A possible reason is that AC members' ownership is considered to be very low, especially in comparison to US ACs (see Warfield, et al., 1995). Moreover, the presence of a financial expert (EXPERT) also indicates no association with EM, which is in line with studies such as Lin, Hutchinson and Percy (2009). A possible explanation is that financial experts on ACs often work as a CFO or CEO in other companies. Consequently, they may not want to question too deeply the managers' work in the company they are overseeing, and run the risk of ruining good relations, as the roles may be reversed in the future. The listing on the FTSE 100 also indicated no association. However, consistent with hypothesis H7, the coefficient for REGULATED is positive and highly significant at the 1% level. Consistent with studies such as Prior et al. (2008), this indicates that managers in regulated industries more heavily manipulate their earnings than do managers in unregulated industries.

INSERT TABLE 7 ABOUT HERE

INSERT TABLE 8 ABOUT HERE

The second model supports the findings of the first model. The results indicate that the presence of an AC member with a professional accounting qualification and accounting or audit experience (ACCPQ, ACCEXP and AUDEXP) has no influence on the magnitude of EM. This is counter-intuitive as it is expected that members with the expertise would be better at detecting earnings manipulation than unskilled members.

Furthermore, the presence of a member with a non-accounting but business or economics academic degree (OTHGRAD) has a negative coefficient which is significant at the 5% level. These findings may indicate that committees without an accounting expert request more detailed explanations from management due to the lack of accounting knowledge. Conversely, an AC with a financial expert may unquestioningly rely on the expert's judgement. Furthermore, the financial expert may focus on the technical accounting details rather than the real economic and financial performance of the company.

In both models, neither firm size (LN_SIZE) nor leverage (LEV) has a significant influence on EM. The cash flow from operations (CFO) has a positive coefficient being significant at the 1% level, while the return on assets (ROA) has a negative coefficient, being slightly significant at the 10% level.

There are two possible reasons for the inconsistency between our results and those of other countries, particularly in the US. First, it may be due to the different legal environments. Unlike in the UK, most countries legally require their listed firms to establish ACs. Second, it is possible that research

in the US is detecting a general CG effect. Specifically, regulations such as SOX aim at improving CG generally so AC effectiveness may be an indication of the firm's overall CG quality which probably differs between countries. If so, this would suggest that AC effectiveness has to be part of a broader CG system in order for the firm to gain measurable benefits.

As discussed earlier, managers have motives to either increase or decrease earnings. Hence, following other studies such as Sun et al. (2010) and Habbash et al. (2010) the sample is split into upward and downward EM in order to investigate if there is a difference. There are considerable differences between upward and downward EM, as well as absolute EM (see Table 8). In comparison to absolute discretionary accruals, the full independence of the AC, ownership, number of members, average remuneration, presence of a financial expert and the listing on the FTSE 100 has no significant influence on either upward or downward EM. Further, REGULATED is highly significant having a positive impact on upward and downward EM.

However, contrary to hypothesis H3, the number of meetings has a positive influence on the magnitude of upward EM. A possible explanation is that a high meeting frequency leads to routines and, consequently, they become highly ceremonial (Spira, 1999) as members become uncritical.

Unexpectedly, the coefficient of (LN_AVGFEEES), the average fees by independent AC directors, is significantly positive in one of the models of upward EM. This result suggests independence is not sufficient. It supports concerns that awarding excessive fees leads to entrenchment by directors, causing them to lose their objectivity and independence (Wright, 1996).

Another interesting finding is that the number of outside directorships, as well as the presence of a member with accounting experience, has a positive impact on the magnitude of downward EM. It

may be that both accounting experience and experience of being non-executive directors in other companies make AC members more prudent and hence support management's intention to create reserves (e.g. by defensive assumptions regarding bad debts or by pre-drawing costs) in good times for weaker future periods. This is consistent with the suggestion that the busy directors with outside directorships are less capable of engaging in effective monitoring. However, the results indicate no significant relationship between upward or downward EM and OTHGRAD. An overview of the regression results regarding the various hypotheses are highlighted in

INSERT TABLE 9 ABOUT HERE

4.4. Robustness Checks

The *F*-Test for all models is highly significant at 1% level indicating that the models are correctly specified. However, the relationship between absolute discretionary accruals and most explanatory variables is insignificant. A possible reason might be that all variables are included simultaneously. Therefore, control variables that are not normally distributed—i.e. all control variables—are dropped from the models (Sun et al., 2010). The regressions without control variables show similar results indicating their robustness (Table 6). Similarly, the results for upward and downward EM are tested (خطأ! لم يتم العثور على مصدر المرجع). The results are similar to the main models results.

INSERT TABLE 10 ABOUT HERE

INSERT TABLE 11 ABOUT HERE

In addition to applying the Kothari et al. (2005) model of estimating EM using total accruals, this study applies the same model using the current accruals (CAC). In the UK, Gore, Pope and Singh (2007) find that discretionary working capital accruals have the effect of significantly increasing the frequencies of firms achieving earnings targets both overall and by small margins. Therefore, discretionary current accruals may be a superior proxy for EM than discretionary long-term accruals. Recent studies, such as Ashbaugh, Lafond and Mayhew (2003), use the discretionary current accruals by applying the same modified Jones model after eliminating PPE. Following Ashbaugh et al. (2003), this study also adds the return on assets of the previous year (ROA) as an additional regressor to the cross-sectional modified Jones model in the current accrual model. Thus, the used equation to calculate the current discretionary accruals (CDAC) is:

$$TACC_{it} / TA_{it-1} = \alpha (I / TA_{it-1}) + \beta_1 (\Delta REV_{it} - \Delta REC_{it}) / TA_{it-1} + \beta_2 ROA_{it-1} + \varepsilon_{it}$$

The results (untabulated) are qualitatively similar to the results for the main test and the additional signed EM tests that were reported in the main results.

Table 8 provides an overview of the results including the regression results with and without control variables:

INSERT TABLE 12 ABOUT HERE

5. Conclusions

This study investigates as broadly as possible the effect of AC characteristics on EM. Using a sample of 392 firm-year observations of companies listed on the FTSE 350 for 2006 and 2007, this study provides one of the first research on the relationship between AC characteristics and EM for UK firms.

Apart from the regulated industry sector and the presence of a member with a relevant academic degree other than accounting, the results indicate no significant relationship with the absolute magnitude of EM, which may appear counter-intuitive. However, the split into upward and downward EM indicates important differences. While most AC characteristics appear to have no effect on the absolute level of EM, some have a significant effect on either upward or downward EM, highlighting the importance of distinguishing between the two directions.

The results along with other recent findings that do not support the agency perspective highlight the need for an alternative theory to explain the CG system as is made clear in Hitt, Certo and Dalton (2007) and Judge (2008).

These results contribute to the continuous debate of AC effectiveness. Critics point out that Enron's AC had six members, of which four were deemed experts—an accounting emeritus professor, an accounting professional and two top executives from other firms. Despite this, they were unable to identify Enron's frauds. This may suggest that ACs rely on management's assertions related to the integrity of the financial information rather than provide independent verification, even when comprised of experts.

In addition, while our result of no relationship between AC characteristics and financial reporting quality is suggestive, we believe some caution is warranted as the firms reporting environment must be conducive to guarantee AC effectiveness. Indeed, Cohen, Krishnamoorthy and Wright (2002) conducted a survey of experienced auditors and report that more than 80% of the respondents believed that the substance (actual effectiveness), not the form (structure) of ACs, is the key issue.

The main limitation to this research is that even though this study used the most advanced model by Kothari et al. (2005) to estimate discretionary accruals the measurement of EM can be disputed. In addition, due to the nature of EM research, the sample selection process resulted in excluding almost half the observations which may affect the representativeness of our results.

Despite these limitations, future researchers could add to this research in a number of ways. First, the sample only includes the FTSE 350 companies. An extension to the FTSE All-Share companies would increase the sample size, which may lead to better results, especially when the sample is split into sub-samples such as in the case of upward and downward EM. Additionally, a larger sample may allow differentiation of the AC characteristics by industry sectors or groups. Furthermore, it may be appealing to enlarge the hypotheses of this study to other related earnings quality measurements (e.g. fraud, restatements, earnings informativeness, etc.). Moreover, it may be beneficial to expand this study to the years 2008 and 2009, in order to investigate if the global economic crisis affected the characteristics of ACs and their impact on EM. Finally, our analysis highlights the insignificance of AC form and points to the substance of ACs that, we hope, will be the subject of further research. Future research may also need to go one step back to examine the effectiveness of ACs in enhancing adequate internal controls and adopt appropriate accounting policies, and by monitoring external auditors to promote high quality and timely financial reporting before assessing AC role in enhancing the outcome of the financial reporting system.

The findings provide useful insights for regulators in order to improve the current regulations on ACs' mechanisms. First, the data show that some British ACs have executive members, which is not consistent with the recommendations of the Corporate Governance Combined Code (2006). Second, the findings of generally ineffectual ACs in the UK, along with similar findings from other countries (see Xie et al. 2003; Peasnell et al. 2005; Baxter & Cotter, 2009), raise concerns about the current

situation of the regulation and the composition of ACs. The result, that ACs have an insignificant role in preventing the incidence of EM, indicates that the presence of an AC in UK-listed companies has yet to achieve its expected monitoring role. The results also increase the awareness of investors and other practitioners (such as auditors or CFOs) of the limitations of ACs' effectiveness in improving the earnings quality in UK firms.

Table 1: Sample Selection Procedure

Sample characteristics	Observations		
	2006	2007	Total
Total firms in FTSE 350 included in DataStream	356	356	712
Excluding duplicates	-3	-3	-6
Excluding companies in ICB sector 7000 (Utilities)	-9	-9	-18
Excluding companies in ICB sector 8000 (Financials)	-108	-108	-216
Excluding companies with missing financial data	-27	-18	-45
Excluding companies with missing data from annual reports and accounts	-20	-7	-27
Excluding companies in ICB sector 6000 (Telecommunications) due to insufficient observations	-4	-4	-8
Final sample	185	207	392

Table 2: Sample Distribution

Sample split according to ICB sector	Observations			Percentage
	FTSE 100	FTSE 250	FTSE 350	
0001 Oil & Gas	14	16	30	7.65%
1000 Basic Materials	21	9	30	7.65%
2000 Industrials	24	100	124	31.63%
3000 Consumer Goods	16	35	51	13.01%
4000 health Care	8	8	16	4.08%
5000 Consumer Service	28	81	109	27.81%
9000 Technology	8	24	32	8.16%
Final sample	119	273	392	100.00%

Table 3: Explanatory Variables

Explanatory variable	Definition	Tested Hypothesis
LN_MEMBERS	Natural Logarithm of the number of AC members	H ₁
LN_MEETINGS	Natural Logarithm of the number of AC meetings	H ₂
FULLYIND	Dummy variable if company if AC is fully independent AC (1= Yes; 0=No)	H ₃
SQ_AVGCD	Square of Average outside directorships (total other non-executive directorships of AC members / AC members)	H ₄
LN_AVGFEEES	Natural Logarithm of average fees for AC Member (Total fees of AC members / Number of AC members)	H ₅
OWN	Percentage owned by AC members [(shares owned by AC members / total shares)*100]	H ₆
ACCPQ	Dummy variable if at least one AC member has an professional accounting qualification such as CPA, ACCA, CIPA and CIMA (1= Yes; 0=No)	H ₇
ACCEXP	Dummy variable if at least one AC member has practical accounting experience as CFO, controller, treasurer, financial manager etc. (1= Yes; 0=No)	H ₇
AUDEXP	Dummy variable if at least one AC member has audit experience i.e. worked for an audit company (1= Yes; 0=No)	H ₇
ACCGRAD	Dummy variable if at least one AC member has an academic accounting degree (1= Yes; 0=No)	H ₇
OTHPG	Dummy variable if at least one AC member has a professional non-accounting qualification in finance or management (1= Yes; 0=No)	H ₇
OTHGRAD	Dummy variable if at least one AC member has another relevant academic degree in Business or Economics such as MBA, DBA, MA in Management etc. (1= Yes; 0=No)	H ₇
EXPERT	Dummy variable if at least one AC member can be considered as a financial expert [ACCPQ and either AUDIT or ACCEXP] (1= Yes; 0=No)	H ₇
REGULATED	Dummy variable if company is in a regulated sector [ICB sectors 1, 4000, 6000 and 9000] (1= Yes; 0=No)	H ₈
FTSE100	Dummy variable if company listed on the FTSE 100 (1= Yes; 0=No)	H ₉

Table 4: Control Variables

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Table 5: Descriptive Statistics

Sample	2006						2007						2006-2007					
	N	Mean	Median	Max	Min	Std. Dev.	N	Mean	Median	Max	Min	Std. Dev.	N	Mean	Median	Max	Min	Std. Dev.
DACC	185	-0.011	-0.003	0.371	-0.375	0.082	207	-0.038	-0.039	0.345	-0.500	0.106	392	-0.025	-0.018	0.371	-0.500	0.096
ADACC	185	0.054	0.035	0.375	0.000	0.063	207	0.083	0.070	0.500	0.000	0.075	392	0.069	0.052	0.500	0.000	0.071
EM	185	0.481	0.000	1.000	0.000	0.501	207	0.300	0.000	1.000	0.000	0.459	392	0.385	0.000	1.000	0.000	0.487
FULLYIND	185	0.632	1.000	1.000	0.000	0.483	207	0.710	1.000	1.000	0.000	0.455	392	0.673	1.000	1.000	0.000	0.470
OWN (in %)	185	0.047	0.011	0.529	0.000	0.100	207	0.091	0.011	9.924	0.000	0.693	392	0.070	0.011	9.924	0.000	0.508
MEETINGS	185	4.065	4.000	8.000	1.000	1.223	207	3.966	4.000	8.000	1.000	1.327	392	4.013	4.000	8.000	1.000	1.278
LN_MEETINGS	185	1.358	1.386	2.079	0.000	0.302	207	1.326	1.386	2.079	0.000	0.326	392	1.341	1.386	2.079	0.000	0.315
MEMBERS	185	3.551	3.000	7.000	2.000	0.872	207	3.546	3.000	8.000	2.000	0.917	392	3.548	3.000	8.000	2.000	0.895
LN_MEMBERS	185	1.239	1.099	1.946	0.693	0.238	207	1.236	1.099	2.079	0.693	0.242	392	1.237	1.099	2.079	0.693	0.240
AVGFEEES (in '000 £)	185	47.854	43.333	107.000	27.000	16.962	207	51.215	45.667	107.000	27.000	18.982	392	49.629	44.833	107.000	27.000	18.113
LN_AVGFEEES	185	3.813	3.769	4.673	3.296	0.324	207	3.877	3.821	4.673	3.296	0.333	392	3.847	3.803	4.673	3.296	0.330
AVGCD	185	1.697	1.600	5.000	0.000	0.963	207	1.735	1.667	5.250	0.000	0.956	392	1.717	1.667	5.250	0.000	0.958
SQ_AVGCD	185	3.803	2.560	25.000	0.000	4.148	207	3.922	2.778	27.563	0.000	3.996	392	3.865	2.778	27.563	0.000	4.064
EXPERT	185	0.605	1.000	1.000	0.000	0.490	207	0.585	1.000	1.000	0.000	0.494	392	0.594	1.000	1.000	0.000	0.492
ACCPQ	185	0.686	1.000	1.000	0.000	0.465	207	0.662	1.000	1.000	0.000	0.474	392	0.673	1.000	1.000	0.000	0.470
ACCXP	185	0.751	1.000	1.000	0.000	0.433	207	0.768	1.000	1.000	0.000	0.423	392	0.760	1.000	1.000	0.000	0.428
AUDEXP	185	0.238	0.000	1.000	0.000	0.427	207	0.251	0.000	1.000	0.000	0.435	392	0.245	0.000	1.000	0.000	0.431
ACCGRAD	185	0.016	0.000	1.000	0.000	0.127	207	0.034	0.000	1.000	0.000	0.181	392	0.026	0.000	1.000	0.000	0.158
OTHPQ	185	0.081	0.000	1.000	0.000	0.274	207	0.072	0.000	1.000	0.000	0.260	392	0.077	0.000	1.000	0.000	0.266
OTHGRAD	185	0.200	0.000	1.000	0.000	0.401	207	0.237	0.000	1.000	0.000	0.426	392	0.219	0.000	1.000	0.000	0.414
FTSE100	185	0.308	0.000	1.000	0.000	0.463	207	0.300	0.000	1.000	0.000	0.459	392	0.304	0.000	1.000	0.000	0.460
REGULATED	185	0.195	0.000	1.000	0.000	0.397	207	0.203	0.000	1.000	0.000	0.403	392	0.199	0.000	1.000	0.000	0.400
FSIZE (in '000 000 £)	185	4,256	973	119,000	34	12,724	207	4,549	1,070	134,000	33	13,663	392	4,411	1,026	134,000	33	13,212
LN_FSIZE	185	13.939	13.789	18.592	10.423	1.530	207	14.022	13.883	18.715	10.398	1.502	392	13.983	13.841	18.715	10.398	1.514
LEV (in %)	185	21.186	17.470	100.000	0.000	21.047	207	23.043	18.147	100.000	0.000	23.157	392	22.167	17.973	100.000	0.000	22.178
CFO (in %)	185	12.101	10.606	101.169	-29.142	10.930	207	12.143	10.031	80.801	-5.598	9.508	392	12.123	10.207	101.169	-29.142	10.190
ROA (in %)	185	8.507	6.908	41.082	-27.188	7.719	207	8.363	7.054	63.081	-46.169	8.939	392	8.431	6.973	63.081	-46.169	8.375

If not otherwise stated the numbers are given as decimal numbers. The definitions of the used variables are summarised in Tab. 3 and 4.

Table 6: Correlation Matrix

Sample	FTSE 350	2006-2007	N=392																		
	DACC	ADACC	FULLYIND	OWN	LN_MEETINGS	LN_MEMBERS	LN_AVGFEEES	SQ_AVGCD	EXPERT	ACCPQ	ACCEXP	ACCGRAD	AUDEXP	OTHPQ	OTHGRAD	FTSE100	REGU-LATED	LN_FSIZE	LEV	CFO	ROA
DACC	1																				
ADACC	-0.316 (0)***	1																			
FULLYIND	0.044 (0.383)	0.016 (0.759)	1																		
OWN	0.041 (0.422)	0.011 (0.823)	-0.117 (0.021)**	1																	
LN_MEETINGS	0.069 (0.175)	0.013 (0.798)	0.147 (0.004)***	0.005 (0.914)	1																
LN_MEMBERS	-0.041 (0.418)	-0.088 (0.08)*	-0.073 (0.151)	0.018 (0.72)	0.252 (0)***	1															
LN_AVGFEEES	-0.087 (0.085)*	0.023 (0.649)	-0.073 (0.151)	-0.053 (0.292)	0.297 (0)***	0.309 (0)***	1														
SQ_AVGCD	0.035 (0.486)	0.014 (0.775)	0.073 (0.151)	0.016 (0.754)	0.116 (0.022)**	0.112 (0.66)	0.112 (0.027)**	1													
EXPERT	0.013 (0.795)	-0.053 (0.299)	0.001 (0.986)	-0.062 (0.221)	0.091 (0.071)*	0.061 (0.225)	0.009 (0.862)	-0.102 (0.043)**	1												
ACCPQ	-0.028 (0.584)	-0.063 (0.214)	-0.032 (0.522)	-0.071 (0.158)	0.039 (0.446)	-0.029 (0.572)	-0.045 (0.374)	0.843 (0.227)	0.001 (0)***	1											
ACCEXP	0.043 (0.397)	-0.023 (0.651)	0.106 (0.036)**	0.011 (0.834)	0.079 (0.117)	0.162 (0.001)***	0.084 (0.095)*	-0.031 (0.546)	0.400 (0)***	0.119 (0.019)**	1										
ACCGRAD	-0.001 (0.978)	0.007 (0.892)	-0.060 (0.237)	-0.016 (0.759)	0.025 (0.624)	0.092 (0.069)*	-0.060 (0.238)	-0.011 (0.83)	0.101 (0.046)**	0.113 (0.026)**	0.053 (0.295)	1									
AUDEXP	0.004 (0.942)	-0.011 (0.824)	0.017 (0.737)	0.103 (0.041)**	-0.072 (0.155)	0.024 (0.633)	-0.081 (0.109)	-0.027 (0.596)	0.325 (0)***	0.245 (0)***	-0.055 (0.275)	0.058 (0.249)	1								
OTHPQ	0.075 (0.141)	0.058 (0.253)	-0.066 (0.195)	0.169 (0.001)***	-0.042 (0.409)	0.055 (0.277)	-0.020 (0.689)	-0.091 (0.073)*	0.121 (0.017)**	0.119 (0.019)**	0.117 (0.021)**	-0.047 (0.358)	-0.030 (0.553)	1							
OTHGRAD	0.077 (0.128)	-0.081 (0.109)	0.027 (0.589)	-0.036 (0.479)	0.037 (0.467)	0.119 (0.019)**	0.133 (0.009)***	-0.022 (0.661)	0.199 (0)***	0.159 (0.002)***	0.197 (0)***	0.188 (0.265)	0.056 (0.013)**	0.126 (0.013)**	1						
FTSE100	-0.025 (0.619)	-0.008 (0.867)	-0.037 (0.463)	-0.050 (0.322)	0.342 (0)***	0.299 (0)***	0.517 (0)***	0.109 (0.031)**	-0.065 (0.201)	-0.155 (0.002)***	0.072 (0.155)	-0.107 (0.035)**	-0.118 (0.02)**	-0.044 (0.385)	0.066 (0.195)	1					
REGULATED	0.124 (0.014)**	0.243 (0)***	-0.116 (0.021)**	0.111 (0.028)**	0.113 (0.026)**	-0.070 (0.164)	-0.040 (0.432)	0.065 (0.196)	-0.089 (0.926)	-0.094 (0.079)*	-0.094 (0.062)*	0.000 (0.994)	0.058 (0.253)	0.001 (0.988)	0.045 (0.379)	0.088 (0.082)*	1				
LN_FSIZE	-0.001 (0.982)	-0.101 (0.045)**	0.136 (0.007)***	-0.082 (0.106)	0.400 (0)***	0.440 (0)***	0.584 (0)***	0.075 (0.138)	0.028 (0.58)	-0.017 (0.73)	0.104 (0.04)**	-0.065 (0.197)	-0.109 (0.031)**	-0.095 (0.06)*	0.030 (0.557)	0.613 (0)***	-0.133 (0.008)***	1			
LEV	0.023 (0.649)	-0.103 (0.041)**	-0.023 (0.651)	0.014 (0.784)	0.026 (0.61)	0.050 (0.328)	0.063 (0.214)	-0.028 (0.586)	0.122 (0.016)**	0.081 (0.108)	0.144 (0.004)***	-0.050 (0.328)	-0.002 (0.971)	-0.011 (0.821)	-0.012 (0.82)	-0.067 (0.184)	-0.162 (0.001)***	0.204 (0)***	1		
CFO	-0.438 (0)***	0.249 (0)***	-0.097 (0.056)*	0.011 (0.822)	-0.034 (0.507)	-0.038 (0.449)	0.115 (0.023)**	-0.043 (0.4)	-0.090 (0.075)*	-0.060 (0.238)	-0.111 (0.028)**	0.050 (0.324)	0.015 (0.772)	-0.048 (0.344)	-0.022 (0.665)	0.055 (0.278)	-0.015 (0.767)	-0.196 (0)***	-0.186 (0)***	1	
ROA	-0.011 (0.834)	0.011 (0.833)	-0.027 (0.59)	-0.039 (0.446)	0.034 (0.499)	-0.004 (0.936)	0.129 (0.01)**	0.029 (0.566)	-0.034 (0.501)	-0.025 (0.618)	-0.049 (0.331)	0.040 (0.433)	0.007 (0.886)	-0.020 (0.694)	0.035 (0.488)	0.078 (0.123)	-0.045 (0.378)	-0.103 (0.042)**	-0.216 (0)***	0.652 (0)***	1

P-Value given in parenthesis. The "*", "**" and "***" represents P-Values less than 10%, 5% and 1%, respectively. The definitions of the used variables are summarised in Tab. 3 and 4.

Table 7: Regressions Results 1

Dependent variable: ADACÇ		2006 - 2007	
Independent variable	Predicted sign	Model 1	Model 2
INTERCEPT		0.0050 (0.0438)	-0.0030 (0.0429)
Explanatory Variables			
FULLYIND	-	0.0105 (0.0069)	0.0104 (0.0073)
OWN	-	-0.0030 (0.0019)	-0.0034 (0.0023)
LN_MEETINGS	-	0.0033 (0.0103)	0.0023 (0.0104)
LN_MEMBERS	-	-0.0157 (0.0169)	-0.0151 (0.0161)
LN_AVGFEEES	-	0.0150 (0.0108)	0.0173 (0.011)
SQ_AVGCD	-	0.0002 (0.0009)	0.0002 (0.0008)
EXPERT	-	-0.0029 (0.0066)	
ACCPQ	-		-0.0022 (0.0081)
ACCEXP	-		0.0098 (0.0082)
AUDEXP	-		-0.0028 (0.0076)
OTHGRAD	?		-0.0147 (0.0066**)
FTSE100	?	-0.0090 (0.0091)	-0.0097 (0.0096)
REGULATED	-	0.0429 (0.0101***)	0.0445 (0.0097***)
Control Variables			
LN_FSIZE		-0.00021 (0.0032)	-0.00048 (0.0031)
LEV		-0.0001 (0.0002)	-0.0002 (0.0002)
CFO		0.0029 (0.0009***)	0.0029 (0.0009***)
ROA		-0.0022 (0.0012*)	-0.0022 (0.0012*)
N		392	392
F Test		6.121***	5.256***
Prob(F-Test)		0.000	0.000
DW		2.110	2.130
Mean dependent var		0.069	0.069
Adj r ²		0.145	0.148

The "*", "**" and "***" represent p-values less than 10%, 5% and 1%, respectively. The definitions of the used variables are summarised in Tables 3 and 4. Standards errors are corrected with the white period method.

Table 8: Regressions Results – Upward and Downward EM

Dependent variable: ADACC _{it}		2006 - 2007			
Independent variable	Predicted sign	Model 1	Model 1	Model 2	Model 2
		Upward EM	Downward EM	Upward EM	Downward EM
INTERCEPT		0.0309 (0.0491)	-0.0713 (0.0502)	0.0447 (0.0525)	-0.0830 (0.0491*)
Explanatory Variables					
FULLYIND	-	0.0002 (0.0102)	0.0120 (0.0073)	-0.0004 (0.0113)	0.0124 (0.0073*)
OWN	-	-0.0017 (0.0026)	0.0066 (0.0377)	-0.0024 (0.0037)	0.0096 (0.0386)
LN_MEETINGS	-	0.0273 (0.0129**)	-0.0103 (0.0129)	0.0317 (0.0151**)	-0.0135 (0.0128)
LN_MEMBERS	-	-0.0381 (0.0303)	0.0150 (0.0148)	-0.0384 (0.0285)	0.0159 (0.0145)
LN_AVGFEEES	-	0.0271 (0.0156*)	-0.0083 (0.0116)	0.0255 (0.0177)	-0.0048 (0.0116)
SQ_AVGCD	-	-0.0011 (0.0011)	0.0021 (0.0009**)	-0.0013 (0.0012)	0.0021 (0.0009**)
EXPERT	-	-0.0157 (0.0125)	0.0059 (0.0065)		
ACCPQ	-			-0.0205 (0.015)	0.0058 (0.0074)
ACCEXP	-			-0.0038 (0.0169)	0.0169 (0.0076**)
AUDEXP	-			0.0036 (0.0126)	-0.0022 (0.0081)
OTHGRAD	?			-0.0017 (0.0084)	-0.0128 (0.0083)
FTSE100	?	-0.0047 (0.0142)	-0.0102 (0.0097)	-0.0050 (0.0162)	-0.0099 (0.0099)
REGULATED	-	0.0541 (0.0125***)	0.0404 (0.0123***)	0.0516 (0.0118***)	0.0447 (0.0121***)
Control Variables					
LN_FSIZ		-0.00400 (0.0034)	0.00816 (0.0035**)	-0.00437 (0.0041)	0.00754 (0.0036**)
LEV		0.0001 (0.0002)	-0.0001 (0.0002)	0.0001 (0.0002)	-0.0002 (0.0002)
CFO		-0.0035 (0.0008***)	0.0057 (0.0006***)	-0.0035 (0.0008***)	0.0057 (0.0006***)
ROA		0.0021 (0.0007***)	-0.0047 (0.0007***)	0.0021 (0.0007***)	-0.0046 (0.0007***)
N		151	241	151	241
F Test		4.095***	11.227***	3.366***	9.49***
Prob(F-Test)		0.000	0.000	0.000	0.000
DW		2.575	2.245	2.544	2.238
Mean dependent var		0.058	0.077	0.058	0.077
Adj r ²		0.211	0.356	0.202	0.361

The "*", "**" and "***" represent t-Values less than 10%, 5% and 1%, respectively. The definitions of the used variables are summarised in Tables 3 and 4. Standards errors are corrected with the white period method.

Table 5: Regressions Results Overview

Tested Hypothesis	Explanatory Variable	Predicted	ADACC	Upward EM	Downward EM
H ₁ Number of AC members	LN_MEMBERS	-	<i>insign.</i>	<i>insign.</i>	<i>insign.</i>
H ₂ Number of AC meetings	LN_MEETINGS	-	<i>insign.</i>	+	<i>insign.</i>
H ₃ Fully independent AC	FULLYIND	-	<i>insign.</i>	<i>insign.</i>	<i>insign.</i>
H ₄ Average outside directorships	SQ_AVGCD	-	<i>insign.</i>	<i>insign.</i>	+
H ₅ Average remuneration	LN_AVGFEEES	-	<i>insign.</i>	<i>insign.</i>	<i>insign.</i>
H ₆ AC member ownership	OWN	-	<i>insign.</i>	<i>insign.</i>	<i>insign.</i>
H ₇ Financial Expert	EXPERT	-	<i>insign.</i>	<i>insign.</i>	<i>insign.</i>
H ₇ Professional Accounting Qualification	ACCPQ	-	<i>insign.</i>	<i>insign.</i>	<i>insign.</i>
H ₇ Accounting Experience	ACCXP	-	<i>insign.</i>	<i>insign.</i>	+
H ₇ Audit Experience	AUDEXP	-	<i>insign.</i>	<i>insign.</i>	<i>insign.</i>
H ₇ Other Grad	OTHGRAD	-	-	<i>insign.</i>	<i>insign.</i>
H ₈ Regulated industry sectors	REGULATED	+	+	+	+
H ₉ Listening on the FTSE 100	FTSE100	?	<i>insign.</i>	<i>insign.</i>	<i>insign.</i>

Only results that are in both models significant (at least at **10% level**) are reported. Insignificant results are represented by "insign."

findings comply with hypothesis

findings contradict hypothesis

Table 6: Regressions Results – Robustness Check

Dependent variable: ADACC _{it}		2006 - 2007	
Independent variable	Predicted sign	Model 1 Robust	Model 2 Robust
INTERCEPT		0.0180 (0.0514)	0.0092 (0.0505)
Explanatory Variables			
FULLYIND	-	0.0068 (0.0076)	0.0070 (0.008)
OWN	-	-0.0016 (0.0026)	-0.0018 (0.0031)
LN_MEETINGS	-	-0.0011 (0.0114)	-0.0027 (0.0116)
LN_MEMBERS	-	-0.0221 (0.017)	-0.0212 (0.0162)
LN_AVGFEEs	-	0.0195 (0.0143)	0.0218 (0.0143)
SQ_AVGCD	-	-0.0003 (0.0009)	-0.0003 (0.0008)
EXPERT	-	-0.0077 (0.0074)	
ACCPQ	-		-0.0048 (0.0087)
ACCEXP	-		0.0044 (0.0087)
AUDEXP	-		-0.0015 (0.0081)
OTHGRAD	?		-0.0163 (0.0066**)
FTSE100	?	-0.0084 (0.0097)	-0.0088 (0.01)
REGULATED	-	0.0451 (0.0095***)	0.0463 (0.0092***)
N		392	392
F Test		3.392***	2.82***
Prob(F-Test)		0.001	0.001
DW		1.984	2.010
Mean dependent var		0.069	0.069
Adj r ²		0.052	0.053

The "*", "**" and "***" represents *P*-Values less than 10%, 5% and 1%, respectively. The definitions of the used variables are summarised in Table 3 and 4. Standards errors are corrected with the white period method.

Table 7: Regressions Results – Robustness Check Upward and Downward EM

Dependent variable: ADACC _{it}		2006 - 2007			
Independent variable	Predicted sign	Model 1	Model 1	Model 2	Model 2
		Robust	Robust	Robust	Robust
		Upward EM	Downward EM	Upward EM	Downward EM
INTERCEPT		0.0081 (0.0506)	0.0154 (0.0833)	0.0195 (0.0516)	-0.0038 (0.0813)
Explanatory Variables					
FULLYIND	-	-0.0001 (0.0108)	0.0147 (0.0099)	-0.0020 (0.0115)	0.0159 (0.0099)
OWN	-	-0.0033 (0.0024)	0.0682 (0.051)	-0.0043 (0.0034)	0.0729 (0.0524)
LN_MEETINGS	-	0.0261 (0.0132*)	-0.0111 (0.0168)	0.0319 (0.0152**)	-0.0170 (0.0161)
LN_MEMBERS	-	-0.0505 (0.0323)	0.0005 (0.018)	-0.0525 (0.0294*)	0.0023 (0.0177)
LN_AVGFEEES	-	0.0210 (0.0141)	0.0143 (0.0221)	0.0184 (0.0149)	0.0186 (0.0225)
SQ_AVGCD	-	-0.0013 (0.0014)	0.0009 (0.001)	-0.0014 (0.0014)	0.0009 (0.001)
EXPERT	-	-0.0135 (0.013)	-0.0024 (0.0096)		
ACCPQ	-			-0.0206 (0.0151)	0.0024 (0.0109)
ACCEXP	-			0.0024 (0.017)	0.0120 (0.0105)
AUDEXP	-			0.0022 (0.0133)	-0.0046 (0.0097)
OTHGRAD	?			-0.0043 (0.009)	-0.0217 (0.0099**)
FTSE100	?	-0.0163 (0.0131)	-0.0034 (0.0132)	-0.0175 (0.0134)	-0.0038 (0.0138)
REGULATED	-	0.0542 (0.0127***)	0.0492 (0.0167***)	0.0527 (0.0117***)	0.0544 (0.0169***)
N		151	241	151	241
F Test		3.453***	1.919*	2.728***	1.788*
Prob(F-Test)		0.001	0.050	0.002	0.051
DW		2.421	2.002	2.423	2.031
Mean dependent var		0.058	0.077	0.058	0.077
Adj r ²		0.128	0.033	0.121	0.038

The "*", "**" and "***" represents *P*-Values less than 10%, 5% and 1%, respectively. The definitions of the used variables are summarised in Tab. 3 and 4. Standards errors are corrected with the *white period method* .

Table 8: Robust Regressions Results Overview

Tested Hypothesis	Explanatory Variable	Predicted	ADACC	Upward EM	Downward EM
H ₁ Number of AC members	LN_MEMBERS	-	<i>insign.</i>	<i>insign.</i>	<i>insign.</i>
H ₂ Number of AC meetings	LN_MEETINGS	-	<i>insign.</i>	+	<i>insign.</i>
H ₃ Fully independent AC	FULLYIND	-	<i>insign.</i>	<i>insign.</i>	<i>insign.</i>
H ₄ Average outside directorships	SQ_AVGCD	-	<i>insign.</i>	<i>insign.</i>	+
H ₅ Average remuneration	LN_AVGFEEES	-	<i>insign.</i>	<i>insign.</i>	<i>insign.</i>
H ₆ AC member ownership	OWN	-	<i>insign.</i>	<i>insign.</i>	<i>insign.</i>
H ₇ Financial Expert	EXPERT	-	<i>insign.</i>	<i>insign.</i>	<i>insign.</i>
H ₇ Professional Accounting Qualification	ACCPQ	-	<i>insign.</i>	<i>insign.</i>	<i>insign.</i>
H ₇ Accounting Experience	ACCEXP	-	<i>insign.</i>	<i>insign.</i>	+
H ₇ Audit Experience	AUDEXP	-	<i>insign.</i>	<i>insign.</i>	<i>insign.</i>
H ₇ Other Grad	OTHGRAD	-	-	<i>insign.</i>	-
H ₈ Regulated industry sectors	REGULATED	+	+	+	+
H ₉ Listening on the FTSE 100	FTSE100	?	<i>insign.</i>	<i>insign.</i>	<i>insign.</i>

Only results that are in both models significant (at least at **10% level**) are reported. Insignificant results are represented by "insign."

- findings (w/ control variables) comply with hypothesis
- robust findings (w/o control variables) comply with hypothesis
- findings (w/ control variables) contradict hypothesis
- robust findings (w/o control variables) contradict hypothesis

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