

**Combatting bribery and corruption: does corporate anti-corruption  
commitment lead to more or less audit effort?**

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# **Combatting bribery and corruption: does corporate anti-corruption commitment lead to more or less audit effort?**

## **Abstract**

Firms and their external auditors can both help to combat the international scourge of business-related bribery and corruption. However, previous empirical research has not investigated whether the two are related and, if so, how. This paper examines whether auditors reduce their own effort in response to firms' anti-corruption policies and actions, or whether firms that are committed to combating corruption require their auditors to undertake more effort. Based on 2,012 firm-year observations of UK FTSE 350-listed nonfinancial firms over the period 2002-2016 and using audit fee as a proxy for audit effort, our results indicate a positive and significant association between audit fees and corporate anti-corruption commitment, suggesting that firms that have stronger anti-corruption commitment actively involve their auditors in their agenda. Further analysis finds that internal (managerial) and external (institutional) shareholdings negatively moderate the link, indicating their contribution as governance mechanisms to mitigate agency conflict and reduce audit risk, and therefore payment of lower audit fees. The findings are robust across several modelling specifications, different measures of variables, different subsamples and addressing possible endogeneity issues. Suggestions for further research are discussed, as are the implications for policy and practice, especially in relation to how firms and their auditors can complement each other's contributions to the anti-corruption agenda.

## **Keywords**

Bribery, Corruption, Corporate anti-corruption commitment, Audit fees, Audit effort, Shareholding structure

## 1. Introduction

Corruption – which includes bribery, fraud and money-laundering – causes extensive economic and social harm in both developing and developed countries (Adelopo & Rufai, 2020). Indeed, Baum et al. (2019) estimate that the world could avoid losing \$1 trillion of tax revenues, or 1.25% of global GDP, by curbing corruption. Non-governmental organizations, such as Transparency International, and supra-national bodies (e.g., the OECD and the Global Sustainability Standards Board) are therefore putting pressure on business not to become involved in corruption. National legislation is also increasingly common in this area; notable government efforts to tackle corruption include the US Foreign Corrupt Practices Act of 1977, the UK Bribery Act 2010, and Sapin II in France (implemented 2017). Such legislation helps to focus firms' attention on corruption.

There are several possible harmful consequences for a business accused of corruption: substantial fines; large settlements under deferred prosecution agreements; the cost and inconvenience of subsequent monitoring arrangements; being barred from bidding for future work (e.g., for the World Bank); severe reputational damage; and consumer boycotts. These possibilities give businesses, especially large ones, incentives to reduce corruption risk (Barkemeyer et al., 2015; Healy & Serafeim, 2016; Jeppesen, 2019; Islam et al., 2021). Some businesses might also acknowledge less directly instrumental reasons to mitigate corruption risk, as part of a broader commitment to having a strong ethical reputation or being a good corporate citizen (Wood & Logsdon, 2001). Corporate actions to combat corruption include detailed policies and procedures, risk assessments, due diligence, communication and training, and monitoring and review.<sup>1</sup>

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<sup>1</sup> See, for example, Section 9 of the UK Bribery Act 2010 Guidance. Available at <https://www.justice.gov.uk/downloads/legislation/bribery-act-2010-guidance.pdf>. Accessed 4<sup>th</sup> September 2022.

Given their specialist skills and unique access when scrutinizing corporate financial information, external auditors also have a significant role to play (Khalil et al., 2015; Farooq & Shehata, 2018; Jeppesen, 2019). Jeppesen (2019) argues that, while it is management's responsibility to establish and operate internal controls to combat corruption, independent monitoring of such internal controls by external auditors is important to ensure their effectiveness. Indeed, in its recent recommendation for combating bribery of foreign officials, the OECD Council stresses the important role of external audits to prevent and detect bribery (OECD, 2021).

However, while external auditors' work might be generally complementary to corporate anti-corruption commitment, the extent to which this potential is realized at the firm level might vary from case to case. On the one hand, in the light of their assessment of a client's anti-corruption commitment, external auditors might feel able to reduce their own effort, perhaps because they perceive audit risk to be lower. In a competitive market, this is likely to be associated with a lower audit fee. On the other hand, the scope and depth of an audit is not a given, and a firm with a strong anti-corruption commitment might ask its external auditor to undertake more work than minimally required, resulting in a higher audit fee. Thus, our research question is: do auditors reinforce corporate commitment to combat corruption; or does such commitment on the part of businesses provide, to some extent, a substitute for auditors' corruption-related effort? Our study therefore examines whether – and, if so, how – audit effort, as captured by audit fees, is related to the extent of corporate commitment to combat corruption. Furthermore, given the interest of shareholders in firm-level corruption and its possible consequences, our study also examines whether managerial and institutional shareholdings, as corporate governance mechanisms, moderate the relationship between corporate anti-corruption commitment and audit effort, as reflected in audit fees.

To test our conjectures, we study a sample of UK FTSE 350 nonfinancial firms over a 15-year period (2002-2016), yielding a dataset of 2,012 firm-year observations. We find that our proxy for corporate anti-corruption commitment (CACC) is positively associated with audit effort. This result indicates that audit effort, indicated by higher audit fees, complements corporate commitment to combat corruption. Economically, the results suggest that an increase in our CACC score by 0.1 is associated with a 0.073% increase in audit fees, which is approximately £678 for the average client in the sample. Further analysis supports the proposition that both internal shareholdings (managerial ownership) and external shareholdings (institutional ownership) moderate the relationship between CACC and audit effort.

Our paper contributes to the auditing and corruption literatures in several ways. First, literature on the nexus between auditing and combating corruption has mainly examined the role of external auditing in detecting and/or preventing corruption (Khalil et al., 2015; Farooq & Shehata, 2018; Jeppesen, 2019). This study extends this literature by examining the effect of corporate commitment to combat corruption on audit effort, which to the authors' knowledge has not been addressed before. Second, our findings on the moderation effect of shareholding structure on this relationship suggest that corporate governance can play a significant role in the relationship between CACC and audit effort. Third, although the firm is the main unit involved with corruption/anti-corruption activities, corruption literature is mainly focused on the macro (country) level (Asiedu & Deffor, 2017; Healy & Serafeim, 2016; Farooq & Shehata, 2018; Jeppesen, 2019; Adelopo & Rufai, 2020).<sup>2</sup> Our research, on the other hand, contributes to the literature on anti-corruption behaviour at the micro level. In doing so, it employs a larger

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<sup>2</sup> The limited data on corruption/anti-corruption on the firm level could be one important reason for the dearth of corruption/anti-corruption literature on the micro (firm) level (Healy & Serafeim, 2016; Farooq & Shehata, 2018).

dataset than most previous studies of the association between external auditing and anti-corruption measures, which have tended to focus on a limited number of observations and/or a limited time period (e.g., one year) (e.g., Lyon & Maher, 2005; Khalil et al., 2015; Healy & Serafeim, 2016).

The remainder of the paper is structured as follows: Section 2 presents the theoretical background and develops the hypotheses, under the headings ‘audit effort’ and ‘governance considerations’; Section 3 explains the research materials and methods; results and robustness tests are presented in Section 4; and Section 5 contains the conclusions, implications and limitations of the study.

## 2. Theoretical background and hypothesis development

### 2.1 Audit effort

There are many academic and professional attempts to define corruption, which includes bribery, fraud and money laundering. In the public sector, corruption refers to the abuse of public authority, resources, powers or trust for attaining private benefit (Johnston, 1996; INTOSAI, 2013; Jeppesen, 2019). In the private sector, corruption can refer to employees’ illicit use of their position, authority and power to acquire some personal benefit to the detriment of the organization they represent (Wells, 2014; Islam et al., 2021) and to attempts to gain illegitimate advantage for the business itself (Barkemeyer et al., 2015).

External auditors have a crucial role to play in detecting and curbing corruption at the firm level (Healy & Serafeim, 2016; Farooq & Shehata, 2018; Jeppesen, 2019; OECD, 2021). This has been reflected in some previous empirical research. For example, in a cross-country study covering 50,000 firms from 126 countries, Farooq and Shehata (2018) find that external

auditing helps in fighting corruption (associated with low levels of bribers); and Healy and Serafeim (2016) suggest that corporate disclosure of anti-corruption efforts is positively associated with high quality external auditing (hiring Big 4 auditing firms).

Corporate corruption can signal a lack of management integrity. In addition to the harmful consequences mentioned earlier, which can impact several financial statement items (such as liabilities, provisions and losses), corruption can also lead to significant financial misstatement (Lyon & Maher, 2005; Farooq & Shehata, 2018; Burke et al., 2019; Jeppesen, 2019). Moreover, financial statement users consider financial misstatement arising from corruption as material, regardless of its amount (Jeppesen, 2019).

From an agency theory perspective, auditors are protecting shareholders' interests. The risks arising from corruption could be reflected in the form of additional effort around the nature, timing and extent of audit procedures to achieve the appropriate level of audit quality in forming an audit opinion, leading to a higher audit fee (ISA 330; Burke et al., 2019). Higher residual audit risk might also be reflected in the charging of a risk premium (Lyon & Maher, 2005; Kim & Fukukawa, 2013; LópezPuertas-Lamy et al., 2017; Burke et al., 2019). Indeed, because of the intentional nature of corruption, which tends not to leave a trail of evidence, auditors should undertake more work if they assess higher risk of misstatement resulting from corruption, rather than error (ISA 240; Jeppesen, 2019). Lyon and Maher (2005) document empirical evidence that auditors charge bribe-paying clients higher fees because of the high client business risk and audit business risk associated with such engagements. Therefore, external auditors might be expected to make greater efforts to ensure audit quality (Asante-Appiah, 2020, Duong et al., 2022) or assess audit risk as higher, and consequently charge such firms higher audit fees (Burke et al., 2019; Duong et al., 2022).

Given the implications of potential corruption for auditors, they are likely to take an interest in their clients' efforts to combat corruption. In particular, a demonstrable commitment to combatting corruption could reduce both the work needed by the auditor to deliver an audit of adequate quality and the risk premium associated with the engagement. Because fees are set to reflect the mix and amount of audit labour (effort) required (Hackenbrack et al., 2014), corporate anti-corruption commitment would be expected, on this account, to be associated with lower audit fees.

Although there is a lack of existing direct evidence, if corporate anti-corruption commitment is viewed as a form of socially responsible behaviour that increases auditors' trust in their clients, there is some cognate empirical support for this perspective. For example, LópezPuertas-Lamy et al. (2017) report that auditors assess material misstatement at low levels for socially responsible firms, and studies have documented that firms with strong socially responsible commitment are less involved in earnings management (Kim et al., 2012; Litt et al., 2014) and hence would prompt less effort on the part of their auditor, other things being equal.

On the other hand, it might be argued, perhaps from a legitimacy theory perspective, that responsible firms, with high levels of commitment to combat corruption, are likely to demand high quality audit and more external auditor effort, to help maintain their ethical image, reputation as a responsible corporate citizen and general legitimacy, resulting in the payment of higher audit fees (Kim et al., 2012; Sharma et al., 2018; Saeed et al., 2020).

There is some support for this view. Anti-corruption disclosure literature reveals that businesses with high commitment to fight corruption are usually keen to hire a Big 4 auditor, be effectively monitored by boards with a high percentage of independent directors, and are from countries active in fighting corruption (e.g., Healy & Serafeim, 2016). In addition,



literature on the audit fees-corporate governance nexus argues that firms with sound corporate governance mechanisms (which might include anti-corruption commitment) may demand additional external assurance effort and pay higher audit fees to protect their reputation (Sharma et al., 2018; Sarhan et al., 2019). For, although the regulatory environment implies certain minimum requirements for audits, their depth and scope can differ not just according to the auditor's assessment of risks etc, but also because of client preferences, which are likely to be reflected in the audit engagement letter and resultant fees. Furthermore, the adoption of initiatives to combat corruption could result in additional direct audit work for the audit team and hence a higher fee.

On this account, corporate anti-corruption commitment would be expected to be associated with higher audit fees. This point of view portrays audit effort and corporate commitment as complements to curbing bribery and corruption.

The discussion so far thus suggests two possible narratives. On the one hand, from an agency theory perspective, businesses' commitment to combatting corruption might lead to a perception of lower audit risk on the part of auditors, prompting them to expend less effort in discharging their responsibilities, resulting in a lower audit fee. On the one hand, from a legitimacy theory perspective, firms with high levels of commitment to combat corruption are more likely to value high quality audit services, with additional demands placed upon auditors, and therefore pay higher audit fees.

Given the uniqueness of our research, no equivalent empirical studies are available for direct comparison, but the mixed evidence from cognate studies is consistent with the theoretical uncertainty that we have identified. For example, in a cross-country study of 20 developed countries, Saeed et al. (2020) find empirical evidence indicating that responsible firms (those with high CSR performance) are associated with high quality audit reflected in

high audit fees. Similarly, Sharma et al. (2018) show that there is a positive association between environmental initiatives and audit fees. On the other hand, Asante-Appiah (2020) finds that auditors provide more effort and audit quality for firms with high environmental, social and governance (ESG) risk. Similarly, Burke et al. (2019) report that auditors charge irresponsible businesses higher audit fees. In similar vein, LópezPuertas-Lamy et al. (2017) report that responsible firms are associated with lower material misstatement and therefore lower audit fees. Additionally, for a sample of the US firms, Duong et al. (2022) document a negative link between the quality of a client's code of ethics and audit fees.

Given the foregoing discussion, we expect a relationship between corporate anti-corruption commitment and audit effort, as reflected in audit fees, but we are unsure of its direction. We therefore propose the following non-directional hypothesis.

**H1:** There is a significant association between corporate anti-corruption commitment and audit fees.

## 2.2 Governance considerations

When determining the scope of the work and the fee they are going to charge, auditors are likely to assess not only the controls that a client has in place, but also its governance arrangements, which are a further source of monitoring on behalf of shareholders. From an agency theory perspective, auditors are protecting shareholders' interests, but major shareholders might take a direct interest too, rather than simply rely on the auditors. Consideration of shareholding structure is relevant during the process of audit risk assessment (LópezPuertas-Lamy et al., 2017; Sharma et al., 2018; Burke et al., 2019; ISA 315) and the work to be undertaken. As a governance characteristic, ownership structure can play an

important role in mitigating agency conflict and therefore could moderate the effect of CACC on audit fees (LópezPuertas-Lamy et al., 2017; Sarhan et al., 2019).

From an agency theory perspective, institutional shareholders with concentrated ownership have the power, insider information and incentives to monitor managers' activities (LópezPuertas-Lamy et al., 2017). Similarly, managerial shareholdings could align managers' interests with owners. Therefore, it is expected that effective governance measures in the form of high external (institutional) shareholding and internal (managerial) shareholding will provide active monitoring to emphasize and/or complement the firm's commitment to combatting corruption (LópezPuertas-Lamy et al., 2017). This will reduce business risk, misstatement risk and thereby lower audit fees.

In the same vein, given that some researchers have suggested that CSR activities can be used opportunistically by managers to build their personal standing in society, perhaps reflecting their personalities (Petrenko et al., 2016; Gul et al., 2020), it is possible that some shareholders will perceive corporate anti-corruption commitment, beyond a certain level, as wasteful expenditure, if it is portrayed as a CSR activity. Indeed, from the agency theory lens, managers may generally use CSR activities to advance their careers, magnify their reputation and power (entrenchment), or cover up corporate misbehaviour (e.g., earnings manipulations) (LópezPuertas-Lamy et al., 2017; Saeed et al., 2020; Sarhan & Al-Najjar, 2023). Thus, high levels of apparent anti-corruption commitment could be associated with higher agency conflicts, increases in business risk and risk of material misstatement, and therefore higher audit fees. However, corporate governance features such as high institutional shareholdings could mitigate agency concerns associated with the opportunistic use of corporate anti-corruption commitments by managers and therefore decrease the audit fee (LópezPuertas-Lamy et al., 2017; Gounopoulos et al., 2019; Saeed et al., 2020).

Therefore, we examine whether shareholding structure, in the form of managerial ownership and institutional ownership, moderates the relationship between corporate anti-corruption commitments and audit fees. Cognate empirical evidence in support of this line of thinking includes Gounopoulos et al. (2019), who find that the positive association between political monetary contributions and audit fees is less pronounced among organizations employing high quality governance and powerful managers. Furthermore, Healy and Serafeim (2016) find that firms with effective governance, in the form of a board with a high percentage of independent members, are more committed to using anti-corruption measures.

On the other hand, when developing H1 it was noted that, from a legitimacy theory perspective, responsible firms, with high anti-corruption commitment, are keen to legitimize their businesses via engaging with high quality audit, because high-quality audits help companies to maintain their reputation (Kim et al., 2012; Sharma et al., 2018; Saeed et al., 2020). Similarly, it might be argued that institutional and managerial investors, as effective monitoring mechanisms, in firms with high levels of anti-corruption commitment, are keen to ensure the legitimacy of their business via high quality audit, resulting in the payment of higher audit fees (Sarhan, 2023). Indeed, the literature on the audit fees-corporate governance nexus has reported that firms with higher levels of director ownership pay higher audit fees (e.g., Sarhan et al., 2019). Therefore, it could be argued that a positive relationship between corporate commitment to combat corruption and audit fees might be strengthened by the existence of high institutional and managerial shareholdings.

Given the uniqueness of our study, no equivalent empirical studies are available for direct comparison, but there is some evidence from cognate studies. For example, LópezPuertas-Lamy et al. (2017) find that shareholding structure (ownership concentration) moderates the association between CSR performance and audit fees. Similarly, Gounopoulos et al. (2019) report that corporate governance quality moderates the positive effect of political

financial contributions on audit fees, and Saeed et al. (2020) find that strong corporate governance strengthens the positive association between CSR and high-quality audits.

In the light of the foregoing discussion, the second, non-directional hypothesis is as follows:

**H2:** Shareholding structure significantly moderates the association between corporate anti-corruption commitment and audit fees.

### 3. Methods

#### 3.1 Data and sample selection

To test the hypotheses, we use a sample of large UK nonfinancial firms over the period 2002 to 2016.

According to Farooq and Shehata (2018), the role of external auditing in combating bribery is more pronounced in countries with high-profile rule of law and judicial independence. In a similar vein, Healy and Serafeim (2016) argue that firms that disclose their anti-corruption efforts are, inter alia, more likely to be from countries with strong anti-corruption enforcement. Thus, the UK is a suitable context for our study, because it has a long tradition of anti-corruption laws, such as the Prevention of Corruption Acts (as they came to be known) of 1889 to 1916. More recently, following its signing of the OECD Anti-Bribery Convention in 1997, the UK introduced the Bribery Act 2010, which is recognized internationally as a particularly wide-ranging piece of anti-corruption legislation. Furthermore, large publicly listed UK firms tend to provide information that can help in the assessment of anti-corruption commitment.

The FTSE 350 index, which comprises the constituents of the FTSE 100 and FTSE 250 indices, contains the UK's largest listed companies by capitalization and is frequently used as the basis for empirical research (e.g., Sarhan & Al-Najjar, 2023; Sarhan et al., 2023). It is the starting point for our sample. We follow the common practice of excluding financial firms, because of their unusual business characteristics and the special regulatory requirements to which they are subject (Asante-Appiah, 2020; Sarhan & Al-Najjar, 2023; Sarhan, 2023), which will influence the nature of their vulnerability and responses to corruption risks. In particular, financial institutions are regulated by anti-money-laundering systems, which may affect their efforts to combat corruption (Sharman & Chaikin, 2009), and standard variables used to study other firms are often unavailable for financial firms or have different significance (e.g., total assets). Furthermore, excluding financial institutions allows us to compare our results with other literature on the relationship between responsible business and audit fees (e.g., Sharma et al., 2018; Asante-Appiah, 2020).

We begin the sample period in 2002, because it is the starting date of the principal Refinitiv Eikon Datastream data that is relevant to our study. Our sample ends in 2016, to avoid possible bias caused by the UK's 'Brexit' vote to leave the European Union. Reinforced by the subsequent COVID-19 pandemic, more recent years have been characterized by high levels of uncertainty in the UK market, increased client business risks, and therefore possible unusual impacts on corporate governance and audit fees (Hassan et al., 2019, 2020; Elsayed et al., 2022). However, the passage of the UK Bribery Act 2010 within the sample period provides an opportunity to investigate the possible effect of its introduction on the relationship between corporate anti-corruption commitment and audit fees.

After dealing with incomplete data, the sample consists of 2,012 firm-year observations. Information on audit fees and shareholdings, together with relevant financial data

and audit control variables, were obtained from Refinitiv Eikon Datastream and FAME (Financial Analysis Made Easy).

### 3.2 Models and variable measurement

Audit fees is the main dependent variable for this study. Past papers use audit fees as a proxy for audit effort and procedures employed and, ultimately, the quality of audited financial statements (Lobo & Zhao, 2013; LópezPuertas-Lamy et al., 2017; Burke et al., 2019; Asante-Appiah, 2020; Saeed et al., 2020; Li & Wang, 2022). When the higher pricing of Big 4 auditing firms is controlled for, audit fees is probably a better proxy of audit effort than of quality, because it will tend to reflect the scope and amount of work agreed in the engagement letter.

Usually, audit fees are negotiated between the external auditor and the client to reflect required audit hours (effort), use of specialized audit staff, and the level of risk premium (Hackenbrack et al., 2014; Sarhan et al., 2019). We recognize the existence of other frequently cited measures of audit effort such as number of audit hours (Che et al., 2014). However, such data about audit hours are not publicly available and, even when access is gained, the data can still have limitations (Che et al., 2014; Sharma et al., 2018).

Corporate commitment to combat corruption will likely be reflected in the policies and management systems followed and applied by firms. Therefore, we develop a corporate anti-corruption commitment proxy that assesses the level of firm anti-corruption commitment in the form of policies and management systems. The anti-corruption commitment score (CACC) is constructed from six indicators related to anti-bribery and corruption provisions collected for the ASSET4 database. The sub-items are whether the firm: (1) mentions public commitment to avoid bribery and corruption at the senior management and board levels; (2) refers to anti-bribery and anti-corruption in its code of conduct; (3) has internal management tools to tackle bribery and corruption, like whistle-blowing systems or hotlines; (4) has a policy to withstand

bribery and corruption in its business transactions; (5) has processes in place to avoid bribery and corruption practices at all its operations; and (6) provides relevant employee training.

Consistent with past studies, we do not claim that the CACC score assesses the effectiveness of the corporate measures for combatting corruption (Healy & Serafeim, 2016; Adelopo & Rufai, 2020). In any case, our interest is in the association with audit effort and fees. However, Healy and Serafeim (2016) report that corporate disclosure of anti-corruption strategies, policies and management systems reflects actual commitment to combat corruption and is not simply ‘cheap talk’.

To test the first hypothesis, CACC and control variables are regressed on audit fees as follows:

$$AFEES_{i,t} = \beta_0 + \beta_1 CACC_{i,t} + CONTROLS_{i,t} + \varepsilon_{i,t} \quad (1)$$

AFEES is the natural logarithm of the total audit fee and CACC is the corporate anti-corruption commitment score. In line with other literature on the determinants of audit fees, the model controls for factors that may affect auditor pricing decisions. Large firms (FSIZE) require more effort and are expected to be involved with more complex operations and ultimately pay higher audit fees (Sharma et al., 2018; Burke et al., 2019; Saeed et al., 2020). Firms with higher return on assets (ROA) (Burke et al., 2019; Saeed et al., 2020) and/or a higher current ratio (CRATIO) (LópezPuertas-Lamy et al., 2017; Li & Wang, 2022) tend to have lower financial risk and so pay lower audit charges, while firms reporting losses during the current year (LOSS) have higher financial risk and are expected to be charged higher audit fees (Sharma et al., 2018; Saeed et al., 2020). Leverage (LEVGE) is expected to have a positive association with audit fees, because firms with high leverage ratio have higher risk of material misstatement (Sharma et al., 2018; Burke et al., 2019; Li & Wang, 2022). Auditors are also expected to charge their client higher audit fees if their year-end is during the auditor’s busy



season (BUSYS) (LópezPuertas-Lamy et al., 2017; Sharma et al., 2018). Clients with complex characteristics indicated by high current assets to total assets (CATA), sales growth ratio (GROWTH) and market to book value ratio (MTBV) are likely pay higher audit fees because such companies have a higher risk of material financial misstatement and require more audit effort (Sharma et al., 2018; Burke et al., 2019). Clients receiving a going concern modified audit opinion (GOINGC) are expected to be charged higher audit fees. Big 4 audit firms (BIGAUD) with high reputation are expected to charge their clients higher audit fees (Gounopoulos et al., 2019), whereas firms hiring a new auditor (AUDCHG) are more likely to be associated with paying lower audit fees as the auditor seeks to keep its client (LópezPuertas-Lamy et al., 2017; Sharma et al., 2018). The models also control for year and industry fixed effects to deal with possible endogeneity as a result of omitted variables. Standard errors reported are clustered by client firm.

The second hypothesis proposes that corporate governance exercised through shareholding structure, in the form of institutional (ISHRS) and managerial (MSHRS) ownership, may also affect audit fees and moderate the association between CACC and AFEES. Two interaction terms (MSHRS × CACC and ISHRS × CACC) are included in the model as test variables for the second hypothesis.

$$AFEES_{i,t} = \beta_0 + \beta_1 CACC_{i,t} + \beta_2 MSHRS + \beta_3 ISHRS + \beta_4 MSHRS \times CACC_{i,t} + \beta_5 ISHRS \times CACC_{i,t} + CONTROLS_{i,t} + \varepsilon_{i,t} \quad (2)$$

Appendix A provides variable definitions.

## 4. Results and discussion

### 4.1 Descriptive statistics

Summary statistics for the dependent, explanatory and control variables are displayed in Table 1. The mean (median) value of the main dependent variable (AFEES) is 13.84 (13.71) (audit fee £0.92 (£0.90) million). The main explanatory variable (CACC) has mean (median) value of 42.8% (50%).<sup>3</sup> The mean managerial and institutional ownership proportions are 6.1% and 13.3%, respectively. In general, the descriptive statistics are consistent with other audit fee and anti-corruption literature.

**Please insert Table 1 here**

Table 2 shows the Pearson correlation matrix between the explanatory and control variables used in the regression models. The results indicate that AFEES is positively (0.485) and significantly (1% level) correlated with CACC, which provides initial support for our first hypothesis. In terms of control variables, AFEES is positively and significantly correlated with FSIZE, BUSYS, LEVGE, LOSS, GOINGC and BIGAUD, while it is negatively and significantly correlated with ROA, CRATIO, CATA and MTBV. All but two (GROWTH and AUDCHG) of the correlations between AFEES and control variables are significant, and in all but two of those cases (CATA, MTBV), the direction is as expected from previous literature. Finally, AFEES is negatively and significantly correlated with MSHRS and ISHRS, our shareholding variables, which supports the idea that monitoring by significant shareholders might mitigate agency conflict and reduce audit risk, and therefore payment of lower audit fees.

The maximum correlation coefficient between different explanatory/control variable is 0.484, indicating that multicollinearity is not a problem (Gujarati, 2003; Wooldridge, 2019). Furthermore, the untabulated variance inflation factors (VIF) show a maximum value of 2.59,

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<sup>3</sup> Cronbach's alpha is 0.869, which indicates the high internal consistency of the CACC index.

which is well below the threshold value of 10, confirming that the regression models are not subject to multicollinearity problems (Gujarati, 2003; Wooldridge, 2019).

**Please insert Table 2 here**

## 4.2 Multivariate results

Our first hypothesis is non-directional. Based on alternative narratives, it posits that corporate anti-corruption commitment could be associated with audit fees in either a positive or a negative way. Table 3 displays OLS regression models of CACC and other test and control variables on audit fees.<sup>4</sup> The models provide good explanatory power, with R-squared generally around 0.6. In Models 1 to 4 of Table 3, the coefficients of CACC are all positive and significant at  $p < 0.01$ , which supports H1 in a positive form. Regarding economic significance, Model 2 suggests that an increase in the CACC score by 0.1 is associated with a 0.073% increase in audit fees, which is approximately £678 for the average client in the sample.

Given the damage that can be caused to a firm if it engages in corrupt behaviour that becomes public knowledge (Lyon & Maher, 2005; Farooq & Shehata, 2018; Burke et al., 2019; Jeppesen, 2019), anti-corruption commitment might be motivated by directly instrumental considerations, but we also find some evidence to suggest that such commitment might be part of a wider ethical and socially responsible business agenda. Overall, then, we find that corporate anti-corruption commitment and auditor anti-corruption effort are likely to be mutually reinforcing. This is a positive sign for international efforts to reduce corruption, with its deleterious effects on economies and societies. The idea that auditors would reduce their anti-corruption efforts if they knew that their client was active in addressing corruption risk – the other directional interpretation of our main hypothesis – is not supported by the evidence.

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<sup>4</sup> The differences in the sample size are explained by the availability of explanatory/control variables.

However, we should note that the evidence does not show that this never occurs, only that it occurs insufficiently frequently to influence the overall findings.

Our results are broadly in line with cognate empirical evidence from Healy and Serafeim (2016), who report that companies with high levels of self-reported combatting of corruption efforts hire a Big 4 audit firm and have relatively strong governance structures. In the same vein, Sharma et al. (2018) and Saeed et al. (2020) found that firms with high responsible performance (in the form of CSR) pay high audit fees, indicating a demand for high audit effort and quality.

As expected, and in line with the audit fees literature, the coefficients of the control variables show that clients that are of large size,<sup>5</sup> report a loss, have high growth rates, or have fiscal year-end in the busy season, are charged higher audit fees (LópezPuertas-Lamy et al., 2017; Sharma et al., 2018; Burke et al., 2019; Sarhan et al., 2019; Gounopoulos et al., 2019; Saeed et al., 2020). On the other hand, clients with high ratio of current assets to total assets or that change their auditors pay lower audit fees (LópezPuertas-Lamy et al., 2017).

**Please insert Table 3 here**

Models 3 and 4 of Table 3 display the results of testing the second hypothesis, which posits that the governance effect of shareholding structure will influence the link between audit fees and corporate anti-corruption commitment. The coefficients of the two interaction terms,  $MSHRS \times CACC$  and  $ISHRS \times CACC$ , are negative and significant, thus providing support for the second hypothesis. However, while the coefficient relating to internal ownership is significant at the 5% level, the coefficient relating to external ownership is only significant at the 10% level, so its significance should be interpreted with some caution. Nevertheless,

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<sup>5</sup> Using natural logarithm of total assets instead of total sales provides similar results.

overall, these results suggest that auditors charge clients committed to combat corruption lower fees, if these companies have high ratios of managerial and/or institutional shareholding that can be interpreted as providing additional monitoring.

Our findings are consistent with the results reported in audit fees literature showing that corporate governance quality, including ownership structure, mitigates the agency issues and therefore could moderate the link between corruption/anti-corruption commitment and audit fees (LópezPuertas-Lamy et al., 2017; Gounopoulos et al., 2019; Saeed et al., 2020).

We re-ran our main equation (1) using each of the sub-items of the CACC index as a main independent variable instead of the combined CACC variable, to examine whether all the sub-items of corporate anti-corruption commitment have a similar effect on audit fees. Our findings, reported in Table 4, show that all the sub-items of the CACC index are positively and significantly associated with audit fees, except in the case of whether the firm's senior management or board has made a public commitment to avoid bribery and corruption in all its operations. This might be either a substantive non-finding or a reflection of the data source for the sub-item.

**Please insert Table 4 here**

### 4.3 Sensitivity tests

We note that Table 3 has already shown that our results are robust, even if we exclude industry and year fixed effects. We now report the results of other robustness tests.

First, past audit fees studies have found that other corporate governance variables, particularly board characteristics such as board size, diversity and composition, may affect audit fees (Sharma et al., 2018; Sarhan et al., 2019; Asante-Appiah, 2020). Therefore, our study additionally controls for board characteristics to check whether the main results are robust to

the concern of omitted variables. The results in Models 1 and 2 of Table 5 show that our main findings related to CACC and the two interaction terms ( $MSHRS \times CACC$  and  $ISHRS \times CACC$ ) persist, with the same levels of significance. Additionally, consistent with the findings of past studies, the coefficients of board size (BSIZE) and independence (BIND) are positive and significant, which indicates that large and independent boards exercise their monitoring function by demanding high audit quality and therefore pay higher audit fees (Sharma et al., 2018; Sarhan et al., 2019; Healy & Serafeim, 2016).

In accordance with H2, our study has examined shareholding structure as a corporate governance mechanism that moderates the relationship between corporate commitment to combat corruption and audit fees. It could be interesting to explore the moderation effect of the additional measures of corporate governance (i.e., board characteristics) on this relationship. Model 3 of Table 5 shows that, although the coefficients of board size (BSIZE) and board independence (BIND) are positive and significant, the coefficients of the interaction terms ( $BSIZE \times CACC$ ,  $BDIV \times CACC$  and  $BIND \times CACC$ ) are statistically insignificant. This finding suggests that there is no moderation effect of board characteristics on the link between corporate anti-corruption commitment and audit fees.

Second, the UK passed the Bribery Act in 2010 to help combat bribery. To explore the possible effect of its introduction on the relationship between corporate commitment to combat corruption and audit fees, the firm-year sample was divided into two sub-samples, before and after the introduction of the Act. Equations 1 and 2 were then re-estimated. The results for Models 4 and 5 in Table 5 show that the main results reported in Table 3 are insensitive to the introduction of the Bribery Act 2010 and the hypotheses are still supported.

**Please insert Table 5 here**

Third, we conjecture that corporate anti-corruption commitment reflects a firm's business ethics and responsible attitude towards society. Therefore, the main regression models (Equations 1 and 2) are re-estimated using the CSR score (the average of social, environment and economic scores collected from the ASSET4 database) as the main independent variable, rather than CACC. The results reported in Models 1 and 2 of Table 6 show that the CSR coefficient is significant and has a positive sign (Model 1) and the interaction terms ( $MSHRS \times CSRS$  and  $ISHRS \times CSRS$ ) have negative and significant coefficients (Model 2). These results support the notion that corporate commitment to combat corruption is not just directly instrumental but also related to the business ethics and social responsibility of firms. The results indicate that firms with high CSR score tend to pay higher audit fees, consistent with past CSR and audit fees studies (e.g., Sharma et al., 2018; Saeed et al., 2020) and these audit fees are reduced if the high CSR scores are accompanied by governance monitoring mechanisms such as high managerial and institutional shareholdings.

Fourth, similar to past audit fees studies, we use two-stage least squares (2SLS) to control for the issue of possible self-selection bias and endogeneity concerns (e.g., reverse causality and/or the simultaneous demand for audit quality (high audit fees) and corruption combatting commitment) (Gounopoulos et al., 2019; Asante-Appiah, 2020). In line with past corporate governance and CSR studies (Sarhan & Al-Najjar, 2023; Sarhan, 2023), the lag value of CACC and the mean value of CACC in the same industry are employed as instruments to estimate the 2SLS model. These instruments are correlated with the endogenous variable (CACC) but have no effect on the dependent variable (AFEES). The untabulated results show that the Sargan statistic is insignificant, indicating the validity and relevance of selected instruments. The results reported in Models 3 and 4 of Table 6 are similar to the main results reported in Table 3. In particular, the CACC coefficient is positive and significant in Model 3 of Table 6 and the two interactions terms of interest ( $MSHRS \times CACC$  and  $ISHRS \times CACC$ )

are negative and significant in Model 4 of Table 6. The 2SLS analysis suggests that endogeneity has not adversely affected our results.

**Please insert Table 6 here**

Fifth, our sample is based on the FTSE 350 largest UK listed firms, which may be subject to scrutiny from different market parties and thereby willing to have sound measures to combat bribery and corruption, demand higher audit quality, hire Big 4 auditors, and pay higher audit fees (Healy & Serafeim 2016; Sarhan & Al-Najjar, 2023; Sarhan, 2023). Therefore, we use Heckman's (1979) two-stage model as an additional robustness test to mitigate selection concerns and omitted variable bias related to firms' decision to hire a Big 4 auditor (Elsayed et al., 2022; Maroun, 2022). This model has two stages. In the first stage, a probit model is run, where we regress possible determinants to choose a Big 4 auditor used in previous audit literature, including FSIZE, LEVGE, ROA, LOSS, CRATIO, CATA, GROWTH and MTBV on BIGAUD (e.g., Ben-Hassoun et al., 2018; Sarhan et al., 2019). In the second stage, we run equations 1 and 2 after controlling for Mill's ratio (IMR), estimated from the probit model in the first step. Models 3 and 4 of Table 7 show Heckman's second-stage estimation models. Our findings from using Heckman's two-stage model are very similar to our main results reported in Table 3, suggesting that self-selection bias is not a material threat to our findings.

**Please insert Table 7 here**

Finally, media coverage of negative ESG issues could increase client business risk. Auditors respond to high level of such risks by increasing the number of audit hours (effort) and the use of specialised audit staff (cost per hour), leading to higher audit fees (Burke et al., 2019; Asante-Appiah, 2020). We test whether bribery and corruption media coverage in the previous fiscal year is associated with current year audit fees. Furthermore, we assess how



bribery and corruption media coverage in the previous fiscal year may affect the relationship between corporate commitment to combat corruption and audit fees in the current year.

$$AFES_{i,t} = \beta_0 + \beta_1 CACC_{i,t} + \beta_2 CMSPOT_{i,t-1} + \beta_3 CMSPOT_{i,t-1} \times CACC_{i,t} + \\ CONTROLS_{i,t} + \varepsilon_{i,t} \quad (3)$$

CMSPOT refers to a dummy that takes the value of one if the firm is under the spotlight of the media because of a controversy linked to bribery and corruption, political contributions, improper lobbying, money laundering, parallel imports or any tax fraud, and zero otherwise (Appendix A provides variable definitions). The results reported in Model 3 of Table 7 show that bribery and corruption (and similar) media coverage in the previous fiscal year is positively associated with current year audit fees. Our results are consistent with the findings of past papers, which found a positive association between media coverage of negative ESG issues and audit fees (e.g., Burke et al., 2019). However, the results reported in Model 4 of Table 7 show insignificant effect of the interaction term ( $CMSPOT_{i,t-1} \times CACC_{i,t}$ ) on audit fees, indicating that the positive association between corporate anti-corruption commitment and audit fees is not driven by negative media coverage in the past fiscal year. Although our proxy, CMSPOT, includes several different negative items relating to media coverage, not just bribery and corruption, the interaction term result provides additional support for the robustness of our main results reported in Table 3.

## 5. Conclusions

There is an accelerated global demand for governments and businesses to combat bribery and corruption. International organizations such as OECD and Transparency International encourage firms to show and exercise more commitment to combatting corruption. Literature suggests that external auditing also has a significant role to play. Our study extends this by providing empirical insights into how firms' anti-corruption commitment is associated with

audit fees, which in turn reflect the effort that external auditors choose, or are requested, to expend on preventing and detecting corruption. In particular, our results indicate that firms that show commitment to combatting corruption tend to demand greater effort from their auditors, which results in higher audit fees. Furthermore, our results show that managerial and institutional shareholdings, as corporate governance mechanisms, can moderate the relationship between corporate anti-corruption commitment and audit effort, as reflected in audit fees. This indicates the contribution of ownership structure as a governance mechanism to mitigate agency conflict and reduce audit risk, and therefore payment of lower audit fees.

To the best of our knowledge, this is the first paper to examine empirically the relationship between corporate anti-corruption commitment and audit effort as reflected in audit fees. The finding of a positive relationship between the two, and of its moderation by managerial and institutional shareholdings, is a novel contribution to the auditing and corruption literatures. In particular, literature on the nexus between auditing and combatting corruption has mainly examined the role of external auditing in detecting and/or preventing corruption (Khalil et al., 2015; Farooq & Shehata, 2018; Jeppesen, 2019), whereas our study examines the relationship between auditing and corporations' own commitment to combat corruption. Second, our findings on the moderation effect of shareholding structure on this relationship suggest that corporate governance can play a significant role in the relationship between CACC and audit effort. Third, although the firm is the main unit involved with corruption/anti-corruption activities, corruption literature is mainly focused on the macro (country) level (Asiedu & Deffor, 2017; Healy & Serafeim, 2016; Farooq & Shehata, 2018; Jeppesen, 2019; Adelopo & Rufai, 2020). Our research, on the other hand, contributes to the literature on anti-corruption behaviour at the micro level. In doing so, it employs a larger dataset than most previous studies of the association between external auditing and anti-corruption measures, which have tended to focus on a limited number of observations and/or a

limited time period (e.g., one year) (e.g., Lyon & Maher, 2005; Khalil et al., 2015; Healy & Serafeim, 2016).

Our findings have several implications for the auditing profession, businesses, regulatory authorities and other stakeholders. First, they validate calls for the auditing profession to rally to the anti-corruption cause (Jeppesen, 2019). Jeppesen (2019) argues that it is management's responsibility to establish and operate internal controls to combat corruption, but independent monitoring of such internal controls by external auditors is important to ensure their effectiveness. Moreover, auditors, given their access and specialist skills, can also provide extra resource to supplement the efforts of internal auditors and other staff to identify possible bribery and corruption taking place within, or on behalf of, the firm. As a corollary, our results also encourage management and audit committee to think carefully about the scope of the audit engagement remit in relation to how the external auditors are expected to complement a firm's own anti-corruption commitment.

Second, previous studies suggest that higher audit effort and, therefore, higher financial reporting quality are associated with high audit fees (LópezPuertas-Lamy et al., 2017; Saeed et al., 2020). Our results indicate that shareholders and other stakeholders can expect higher quality audited financial statements from firms committed to combating corruption. The results also mean that, other things being equal, regulatory authorities and other bodies might direct their monitoring and investigation efforts towards firms with lower anti-corruption commitments. Our results indicate that firms with ethical and socially responsible attitudes and codes of conduct are probably more committed to combatting corruption and demand higher quality audit. Regulators or stock exchange authorities might also wish to consider what indicators of firms' anti-corruption stance could be required; the current study has had to rely on what is currently available.

Finally, in providing evidence of a positive association between corporate anti-corruption commitment and audit effort, our results provide encouragement to non-governmental anti-corruption organizations, such as Transparency International, which recommend practical tools and mechanisms for institutions, individuals and companies wishing to combat corruption and encourage companies to disclose information about their anti-corruption policies and management systems (Transparency International, 2020). Corporate actions can thus contribute to international and national anti-corruption agendas (Healy & Serafeim, 2016; Adelopo & Rufai, 2020; Transparency International, 2020).

It is hoped that future research will build on the foundation provided by this study, but account should also be taken of some of the limitations. First, we have largely interpreted the positive relationship between corporate anti-corruption commitment and audit fees in terms of audit effort, but it is possible that audit risk premium also plays a part (Lyon & Maher, 2005; Sharma et al., 2018; Burke et al., 2019; Asante-Appiah, 2020). Future research could perhaps investigate actual audit rates and hours – although it is challenging to obtain such data (Che et al., 2018) – or the contents of engagement letters. Second, the sample employed in this study comprised the largest companies listed on the London Stock Exchange (FTSE 350). Such firms have more resources and incentives to maintain an ethical and socially responsible profile, including employing mechanisms to combat corruption. Future studies could examine smaller and medium-sized listed companies and unlisted companies. Third, financial firms might be the subject of a future study. Fourth, our study is limited to the UK; similar research should be possible in other international contexts. Fifth, our main explanatory variable, CACC, does not assess the effectiveness of the policies and activities represented by the six sub-items that comprise the CACC index. If possible, future studies should develop measures to differentiate between effective measures and ‘cheap talk’ (Healy & Serafeim, 2016) about anti-corruption, and then examine the effect on auditors’ efforts and judgments. Finally, our study is at the

micro level. Future studies could employ a multilayer research design (firm, industry and across-country levels) to investigate factors that could affect the link between anti-corruption commitment and audit effort/pricing.

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**Appendix A.** Variable definitions.

Variable	Definition
AFEES	Natural logarithm of audit fees.
CACC	Corporate anti-corruption commitment score is constructed with six indicators related to anti-bribery/corruption provisions collected by ASSET4. The indicators are whether the firm (1) mentions public commitment to avoid bribery and corruption at the senior management and board levels (CACC1), (2) refers to anti-bribery and anti-corruption in its code of conduct (CACC2), (3) has internal management tools to tackle bribery and corruption, like whistle-blowing systems or hotlines (CACC3), (4) has a policy to withstand bribery and corruption in its business transactions (CACC4), (5) has processes in place to avoid bribery and corruption practices at all its operations (CACC5), and (6) provides relevant employee training (CACC6). ASSET4 records “Yes” or “No” for each indicator, so that we assign the value of one to “Yes” and zero to “No”. All values are aggregated, so the total score ranges from zero to six, scaled to a value between 0 and 1.
MSHRS	The proportion of shares owned by employees or by those with a substantial position in a company.
ISHRS	The proportion of total shares represented by strategic shareholdings of 5% or more owned by investment banks or institutions, pension funds or endowment funds.
FSIZE	The natural logarithm of total sales.
BUSYS	A dummy that takes the value of one when the client's fiscal year-end is December or January and zero otherwise.
LEVGE	The ratio of total debt to total assets.
ROA	The ratio of net income to total assets.
LOSS	A dummy that takes the value of one if the firm reports a loss during the current year and zero otherwise.
CRATIO	The ratio of current assets to current liabilities.
CATA	The ratio of current assets to total assets.
GROWTH	The ratio of the change in sales revenue to prior year sales revenue.
MTBV	The ratio of the market value of the ordinary equity divided by the balance sheet value of the ordinary equity in the company.
GOINGC	A dummy that takes the value of one if the company received a going-concern modified audit opinion and zero otherwise.
BIGAUD	A dummy that takes the value of one if the client’s external auditor is a Big 4 auditor and zero otherwise.
AUDCHG	A dummy that takes the value of one when the client firm hires a new auditor and zero otherwise.

**Table 1.** Summary of descriptive statistics.

	Mean	SD	p25	Median	p75
AFEES	13.838	1.392	12.899	13.710	14.732
CACC	0.428	0.360	0	0.500	0.833
MSHRS	0.061	0.144	0	0	0.010
ISHRS	0.133	0.147	0	0.090	0.190
FSIZE	14.119	1.684	13.055	14.028	15.144
BUSYS	0.570	0.495	0	1	1
LEVGE	0.250	0.215	0.101	0.234	0.349
ROA	0.071	0.149	0.028	0.059	0.098
LOSS	0.090	0.285	0	0	0
CRATIO	1.698	3.493	0.880	1.290	1.750
CATA	0.411	0.226	0.242	0.379	0.537
GROWTH	0.210	4.466	0.004	0.070	0.165
MTBV	3.491	29.081	1.450	2.460	4.120
GOINGC	0.010	0.092	0	0	0
BIGAUD	0.960	0.193	1	1	1
AUDCHG	0.030	0.176	0	0	0

**Table 2.** Pearson correlation matrix.

AFEES	1																
CACC	0.485***	1															
MSHRS	-0.151***	-0.105***	1														
ISHRS	-0.209***	-0.346***	-0.135***	1													
FSIZE	0.704***	0.418***	-0.137***	-0.214***	1												
BUSYS	0.219***	0.164***	-0.058***	-0.027	0.010	1											
LEVGE	0.157***	0.039*	-0.068***	-0.021	0.102***	-0.026	1										
ROA	-0.148***	-0.130***	0.009	-0.012	-0.124***	0.097***	-0.137***	1									
LOSS	0.080***	0.078***	0.054***	0.026	-0.024	0.001	0.122***	-0.378***	1								
CRATIO	-0.201***	0.011	0.147***	-0.059***	-0.227	0.056***	-0.137***	-0.007	0.092***	1							
CATA	-0.230***	-0.100***	0.080***	0.123***	-0.215***	0.005	-0.382***	0.211***	-0.068***	0.186***	1						
GROWTH	0	-0.032	0.012	-0.022	-0.011	-0.026	-0.019	-0.003	-0.008	0.008	0.010	1					
MTBV	-0.052**	-0.050**	0	0.006	-0.034*	0.033*	-0.083***	0.484***	-0.022	-0.009	0.093***	-0.001	1				
GOINGC	0.079***	0.052**	-0.022	-0.048**	0.053***	0.063***	-0.018	0.110***	0.011	0.014	0.009	-0.003	-0.011	1			
BIGAUD	0.083***	0.087***	-0.168***	0.037*	0.171***	0.034**	0.115***	-0.009	-0.003	-0.047***	-0.057***	-0.004	-0.001	0.019	1		
AUDCHG	-0.024	0.059***	-0.014	0.015	-0.001	-0.002	-0.008	-0.023	0.005	-0.005	-0.012	-0.005	-0.008	0.015	-0.001	1	

See Appendix A for variable definitions.

\* Significant at the 10% level, \*\* significant at the 5% level, and \*\*\* significant at the 1% level.

**Table 3.** Corporate anti-corruption commitment association with audit fees and shareholdings moderation effect.

	AFEES (1)	AFEES (2)	AFEES (3)	AFEES (4)
CACC	.0073*** (6.22)	.0073*** (4.58)	.0062*** (5.00)	.0061*** (3.79)
MSHRS	-	-	-.0047 (-1.12)	-.0054 (0.167)
ISHRS	-	-	-.0050 (-1.57)	-.0089*** (-2.64)
MSHRS × CACC	-	-	-.0002** (-2.00)	-.0002** (-2.35)
ISHRS × CACC	-	-	-.0001* (-1.84)	-.0001* (-1.80)
FSIZE	.5333*** (11.96)	.5472*** (13.03)	.5309*** (12.15)	.5377*** (13.16)
BUSYS	.5358*** (4.88)	.4184*** (4.10)	.5362*** (4.95)	.4069*** (4.08)
LEVGE	-.0009 (-0.35)	.0016 (0.71)	-.0001 (-0.02)	.0028 (1.22)
ROA	.0001 (0.06)	.0021 (0.98)	.0001 (0.05)	.0020 (0.95)
LOSS	.1894** (2.27)	.2013*** (2.71)	.2363*** (2.85)	.2415*** (3.20)
CRATIO	-.0005 (-1.01)	-.0005 (-1.04)	-.0005 (-0.97)	-.0007 (-1.32)
CATA	-.0076*** (-2.71)	-.0107*** (-4.06)	-.0072*** (-2.64)	-.0095*** (-3.67)
GROWTH	.0003*** (4.15)	.0005*** (4.47)	.0003*** (4.03)	.0005*** (4.33)
MTBV	-.0004 (-0.70)	-.0003 (-0.05)	-.0004 (-0.68)	.0001 (0.02)
GOINGC	.3465 (1.43)	.1035 (0.58)	.2571 (1.07)	-.0050 (-0.03)
BIGAUD	.1555 (0.29)	-.0038 (-0.01)	.2039 (0.35)	.0970 (0.17)
AUDCHG	-.3711** (-2.36)	-.3284** (-2.06)	-.3769** (-2.50)	-.3392** (-2.17)
Constant	5.7349*** (6.72)	5.8239*** (6.77)	5.7811*** (6.61)	6.2309*** (6.96)
Year Fixed Effects	No	Yes	No	Yes
Industry Fixed Effects	No	Yes	No	Yes
Obs.	2,012	2,012	2,004	2,004
R-squared	0.5865	0.6356	0.5954	0.6471

See Appendix A for variable definitions.

Table shows coefficient estimates and t-statistics (in parentheses) for explanatory variables.

\* Significant at the 10% level, \*\* significant at the 5% level, and \*\*\* significant at the 1% level.

**Table 4.** Corporate anti-corruption commitment sub-items association with audit fees.

	AFEES (1)	AFEES (2)	AFEES (3)	AFEES (4)	AFEES (5)	AFEES (6)
CACC1	-.0272 (-0.21)	-	-	-	-	-
CACC2	-	.3429*** (3.25)	-	-	-	-
CACC3	-	-	.4205*** (4.54)	-	-	-
CACC4	-	-	-	.3242*** (3.09)	-	-
CACC5	-	-	-	-	.3410*** (3.46)	-
CACC6	-	-	-	-	-	.4459*** (4.23)
FSIZE	.6140*** (15.47)	.5786*** (14.12)	.5701*** (14.05)	.5853*** (14.44)	.5719*** (13.46)	.5645*** (13.25)
BUSYS	.4915*** (4.41)	.4525*** (4.35)	.4541*** (4.29)	.4485*** (4.31)	.4452*** (4.20)	.4365*** (4.05)
LEVGE	.0020 (0.79)	.0014 (0.59)	.0018 (0.75)	.0022 (0.89)	.0020 (0.82)	.0020 (0.84)
ROA	.0014 (0.62)	.0020 (0.90)	.0016 (0.73)	.0021 (0.92)	.0016 (0.73)	.0016 (0.76)
LOSS	.2330*** (3.05)	.2216*** (2.93)	.2278*** (3.08)	.2260*** (3.04)	.2215*** (2.92)	.2019*** (2.71)
CRATIO	-.0005 (-1.04)	-.0006 (-1.22)	-.0005 (-1.04)	-.0005 (-0.95)	-.0006 (-1.20)	-.0004 (-0.75)
CATA	-.0116*** (-4.34)	-.0108*** (-4.00)	-.0108*** (-4.07)	-.0112*** (-4.23)	-.0107*** (-4.07)	-.0117*** (-4.55)
GROWTH	.0004*** (2.90)	.0004*** (3.66)	.0004*** (3.87)	.0005*** (4.02)	.0004*** (3.57)	.0004*** (3.75)
MTBV	-.0007 (-0.09)	-.0006 (-0.08)	-.0001 (-0.02)	-.0003 (-0.04)	-.0001 (-0.02)	-.0005 (-0.07)
GOINGC	.0063 (0.03)	.0077 (0.05)	.0474 (0.25)	.0704 (0.36)	.0395 (0.22)	.1232 (0.61)
BIGAUD	.0931 (0.17)	.0498 (0.09)	.0533 (0.10)	-.0181 (-0.03)	.0562 (0.10)	.0651 (0.12)
AUDCHG	-.2940* (-1.87)	-.3175** (-1.98)	-.3195** (-1.99)	-.3094* (-1.94)	-.3151** (-1.98)	-.3084** (-2.04)
Constant	4.8297*** (5.76)	5.3699*** (6.30)	5.4712*** (6.40)	5.2609*** (6.17)	5.4608*** (6.24)	5.5612*** (6.51)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	2,012	2,012	2,012	2,012	2,012	2,012
R-squared	0.6180	0.6277	0.6316	0.6266	0.6274	0.6315

See Appendix A for variable definitions.

Table shows coefficient estimates and t-statistics (in parentheses) for explanatory variables.

\* Significant at the 10% level, \*\* significant at the 5% level, and \*\*\* significant at the 1% level.

**Table 5.** Corporate anti-corruption commitment association with audit fees: controlling for board characteristics and before and after the 2010 Bribery Act.

	AFEES (1)	AFEES (2)	AFEES (3)	AFEES Before 2010 (4)	AFEES After 2010 (5)
CACC	.0064*** (4.17)	.0052*** (3.28)	.0061*** (3.95)	.0061*** (3.80)	.0059*** (6.01)
MSHRS	-	-.0045 (-1.12)	-.0036 (-0.87)	-.0114** (-2.27)	-.0063*** (-3.34)
ISHRS	-	-.0079** (-2.46)	-.0071** (-2.40)	-.0141*** (-3.31)	-.0029 (-0.84)
MSHRS × CACC	-	-.0002** (-2.26)	-	-.0004*** (-2.89)	-.0001*** (-2.64)
ISHRS × CACC	-	-.0001* (-1.62)	-	-.0002** (-2.24)	-.0002** (-2.27)
BSIZE	.8405*** (3.76)	.7998*** (3.54)	.8170*** (3.59)	-	-
BDIV	.0057 (1.15)	.0043 (0.84)	.0054 (1.12)	-	-
BIND	.0095*** (2.69)	.0102*** (2.80)	.0101*** (2.82)	-	-
BSIZE × CACC	-	-	.0038 (0.91)	-	-
BDIV × CACC	-	-	.0001 (1.25)	-	-
BDIV × CACC	-	-	.0000 (0.32)	-	-
Controls	Yes	Yes	Yes	Yes	Yes
Constant	4.7968*** (5.70)	5.1113*** (6.07)	5.3220*** (6.06)	6.6507*** (11.21)	6.1808*** (16.40)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
Obs.	1,979	1,971	1,971	849	1,008
R-squared	0.6559	0.6660	0.6621	0.5697	0.7256

Variable definitions: BSIZE is the natural logarithm of the total number of board members at the end of the fiscal year. BDIV is the ratio of women on the board of directors. BIND refers to the ratio of non-executive board members. See Appendix A for other variable definitions.

Table shows coefficient estimates and t-statistics (in parentheses) for explanatory variables.

\* Significant at the 10% level, \*\* significant at the 5% level, and \*\*\* significant at the 1% level.



**Table 6.** Corporate social responsibility association with audit fees and the 2SLS analysis.

	AFEES (1)	AFEES (2)	AFEES 2SLS (3)	AFEES 2SLS (4)
CACC	-	-	.0086*** (9.22)	.0067*** (6.50)
CSRS	.0051* (1.91)	.0034 (1.30)	-	-
MSHRS	-	-.0090** (-2.17)	-	-.0045*** (-2.56)
ISHRS	-	-.0092*** (-2.84)	-	-.0108** (-2.00)
MSHRS × CACC	-	-	-	-.0002*** (-5.57)
ISHRS × CACC	-	-	-	-.0002*** (-2.93)
MSHRS × CSRS	-	-.0004*** (-2.69)	-	-
ISHRS × CSRS	-	-.0001* (-1.75)	-	-
Controls	Yes	Yes	Yes	Yes
Constant	5.2142*** (6.03)	5.9288*** (6.75)	6.0043*** (19.42)	6.2873*** (17.69)
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Obs.	2,012	2,004	1,840	1,819
R-squared	0.6219	0.6337	0.6369	0.6532

Variable definitions: CSRS refers to the average of social, environment and economic scores. See Appendix A for other variable definitions.

Table shows coefficient estimates and t-statistics (in parentheses) for explanatory variables, except Models 3 and 4 where z value is in parentheses.

\* Significant at the 10% level, \*\* significant at the 5% level, and \*\*\* significant at the 1% level.

**Table 7.** Corporate anti-corruption commitment association with audit fees: controlling for self-selection bias and corruption media spotlight.

	AFEES Heckman two-step (1)	AFEES Heckman two-step (2)	AFEES (3)	AFEES (4)
CACC	.0086*** (4.81)	.0076*** (4.31)	-	.0071*** (4.17)
CMSPOT	-	-	.2295** (2.14)	.1607 (1.44)
MSHRS	-	-.0047 (-1.17)	-	-
ISHRS	-	-.0077* (-1.94)	-	-
MSHRS × CACC	-	-.0002** (-2.09)	-	-
ISHRS × CACC	-	-.0001 (-1.23)	-	-
CMSPOT × CACC	-	-	-	.0031 (1.23)
Controls	Yes	Yes	Yes	Yes
IMR	1.4896 (1.52)	1.3589 (1.46)	-	-
Constant	5.0202*** (4.99)	5.4251*** (5.14)	4.9109*** (4.63)	5.8246*** (5.30)
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Obs.	1,485	1,477	1,840	1,840
R-squared	0.6151	0.6267	0.6239	0.6403

Variable definitions: IMR refers to Mill's ratio estimated by Heckman's two-stage method. CMSPOT refers to a dummy that takes the value of one if the firm is under the spotlight of the media because of a controversy linked to bribery and corruption, political contributions, improper lobbying, money laundering, parallel imports or any tax fraud, and zero otherwise. See Appendix A for other variable definitions.

Table shows coefficient estimates and t-statistics (in parentheses) for explanatory variables.

\* Significant at the 10% level, \*\* significant at the 5% level, and \*\*\* significant at the 1% level.