

## Bribes and Audit Fees

### ABSTRACT

We exploit the UK Bribery Act 2010 to test whether the pricing of audit services changes with the risk of the client firm engaging in bribery. Adopting a triple-difference design, we show that subject firms operating in countries perceived as more corrupt, where bribery may be necessary to get contracts, pay higher audit fees following the enforcement of the law. We also observe no change in the audit fees for client firms operating in low corruption environments and are also subject to the law. Moreover, we show that the increase in audit fees is not mainly driven by higher compliance costs or by a change in the financial reporting quality. The results indicate that the increase in audit fees after the passage of the UK Bribery Act for subject firms operating in high corruption environments is in compensation for the higher potential litigation and reputation costs for the auditors working for these client firms.

**Keywords:** Audit Fees; Audit quality; Corruption; Bribes; UK Bribery Act 2010.

**JEL codes:** K420, M4, M410, M420, M480, M140

**Data availability:** Upon request

### I. INTRODUCTION

Bribery is a major form of corruption with dire economic consequences. For external auditors it represents not only an ethical concern but also a major economic problem. An external auditor's audit and business risks increase when client firms pay bribes to obtain public contracts, and this will translate into higher audit fees. First, auditors may need to exert a greater effort when auditing these clients. Second, in the event of detection and litigation against the firm, the auditor of the corrupt firm is very likely to suffer a loss of reputation, irrespective of the final verdict. Specifically, after Rolls-Royce admitted to bribery, the company's auditors were criticized for not revealing it as it "gets to the heart of what an auditor is supposed to do".<sup>1</sup> Third, the auditor itself may also be involved in litigation, even if there is no audit failure (AICPA, 1993).<sup>2</sup> Specifically, the Audit

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<sup>1</sup> The Financial Times, May 4, 2017, "Investigation launched into KPMG audit of Rolls-Royce" by Tim Bush. Available at <https://www.ft.com/content/b95bfe1a-309a-11e7-9555-23ef563ecf9a>

<sup>2</sup> AICPA. 1993. Audit Risk Alerts. Available at [https://egrove.olemiss.edu/cgi/viewcontent.cgi?article=1628context=aicpa\\_index](https://egrove.olemiss.edu/cgi/viewcontent.cgi?article=1628context=aicpa_index), accessed January 11, 2021.

Analytics database reports that auditors faced litigation in 404 of the 596 cases that were taken to court under the US Foreign Corrupt Practices Act (FCPA) during the 2001–2019 period.<sup>3</sup> Moreover, although in some cases the amount of bribes a client firm pays may be qualified as immaterial in accounting terms, the legal and reputational penalties for client firms and auditors and losses for shareholders when bribery is discovered are likely to be highly material.

Our paper contributes to the auditing literature by providing causal evidence on the impact that illegal activities at the firm level have on the audit fees they must pay. In particular, we test the hypothesis that, because auditors are generally expected to act as anti-bribery gatekeepers at the firm level, they will charge higher audit fees to firms they perceive as potentially corrupt.

Given the severe endogeneity challenges that we face in testing this idea, our identification strategy follows Zeume 2017.<sup>4</sup> Specifically, we use the passage of the UK Bribery Act (hereafter UK BA) in 2010 as a quasi-natural experiment in the form of an exogenous shock to the costs of bribery that should be expected to result in higher audit fees. The UK BA is generally considered the harshest anti-bribery law internationally<sup>5</sup> And it has an extraterritorial reach, applying not only to UK firms but also to overseas firms with a UK subsidiary.<sup>6</sup>

For our identification strategy, we measure the change in audit fees before and after the passage of the Act for firms which are subject to the Act and for the firms beyond the reach of the new regulation. We proceed to further separate these groups on the basis of the perceived exposure to

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<sup>4</sup> Zeume (2017) found that subject firms operating in high corruption environments experienced significant market price drops after the passage of the new law, indicating that the new law represented an important exogenous shock to the costs of doing business in corrupt environments.

<sup>5</sup> Transparency International, 'The Bribery Act', available at <http://www.transparency.org.uk/ourwork/businessintegrity/bribery-act/>

<sup>6</sup> Two high profile cases that have been prosecuted under the UK BA to date are the Airbus case, where the Dutch company paid nearly \$4 billion to settle bribery charges involving Airbus managers bribing to secure deals with Malaysian, Sri Lankan and Chinese airlines; and the Rolls-Royce case, where the company was accused of bribing top managers and government officials to sell turbines and engines for passenger jets and military aircraft in Indonesia, Thailand, India, Russia, Nigeria, China and Malaysia.

corruption in the firms' business environment – which depends on the location of their subsidiaries – using the Transparency International Corruption Perceptions Index. We separate them into firms that face high exposure (hereinafter HE) and firms that face low exposure (hereinafter LE) to corruption.

The main result from this triple difference identification strategy is that, after the passage of the UK BA, subject firms that operate in high corruption-exposure environments experience an 8.5% increase in their audit fees compared to non-subject firms operating in high corruption-exposure environments.

Interestingly, these higher audit fees may reflect either higher verification costs, higher audit risk, or higher business risk. Firstly, verification costs increase with the UK BA because the auditor has to verify that subject firms are complying with all the anti-bribery procedures set forth in the new regulation. Nevertheless, we rule out this explanation as the driver of the substantial increase in fees because, if these costs were substantial, they should also affect auditors of subject firms in low corruption environments, and we do not find any statistically significant changes in their audit fees. Moreover, the increase in fees is unrelated to the number of subsidiaries of the firm operating in corrupt countries. Secondly, audit risk could increase because of firms' higher need for secrecy and higher monitoring efforts on the part of the auditors to detect bribery after the passage of the Act. Higher monitoring efforts should be reflected in higher audit quality. However, we do not find any change in audit quality (proxied by discretionary accruals and abnormal operating expenses). All these results are consistent with the increase in audit fees for firms operating in high corruption environments corresponding to higher perceived reputational costs for the auditors, rather than with significant increases in compliance costs or monitoring efforts.

Our paper contributes directly to the literature on the impact of bribery on audit fees by showing

that bribery causes a significant and substantial increment in audit fees to compensate for the increase in the auditor's business risk. Previous studies for US firms have found that US firms operating in countries with higher levels of corruption (Jha et al., 2014; Xu et al., 2019; Houque et al., 2019) pay higher audit fees. Also, for the US, Lyon, and Maher (2005), relying on the voluntary disclosure of bribe-related activities, show that audit fees are higher for client firms that disclosed paying bribes in the period prior to the enforcement of the US FCPA; and Lawson, Martin, Muriel, and Wilkins (2019) find that audit fees are higher for FCPA violators. Nevertheless, our paper has two key differences relative to these previous papers. First, our study, to the best of our knowledge, is the first to show a causal relationship between audit fees and audit-client business risk stemming from illegal activities by exploring an exogenous shock to the cost of bribing. Firms that operate in corrupt environments and firms that confess to, or are convicted of bribery, differ in many respects from other firms. Therefore, while previous studies show a positive correlation between bribery and audit fees, they are unable to solve these endogeneity issues that may bias the results.<sup>7</sup> As noted in Amiram et al. (2018), an important challenge in the accounting literature is to solve the problem of partial observability which is acknowledged as a caveat in the literature. An ideal setting to capture the audit fees differential between bribe-paying and non-bribe-paying firms would be to compare the audit fees between firms that are randomly assigned to paying and not paying bribes, since randomization can eliminate selection biases (Angrist & Pischke, 2009). Such experimental setting does not exist but the passage of the UK BA provides us with a strong quasi-experimental setting. Moreover, given the extraterritorial reach of the UK BA, our results have strong international validity. Second, the importance that auditors attribute to this new legislation implies that our identification strategy not only identifies the causal effect, but also allows us to offer

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<sup>7</sup> In particular, Lawson et al. (2019) find that FCPA violators differ from their counterparts in many firm characteristics such as size, profitability, and the probability of being audited by a Big 4 auditing firm.

a meaningful quantification of the impact of bribery on audit fees. Auditors perceived the UK BA as a turning point in bribery prosecution and noted that a proactive response in both internal and external audit procedures may be needed to mitigate the increased risks. Moreover, the biggest audit firms, with more reputation at stake, seem to be especially aware of the additional risks and costs imposed by the passage of the UK BA. In our sample, 80% of firms are audited by Big-10 auditors and all of them make specific references to how important it is for firms to react to the UK BA and explain how they, as auditors, can help customer firms to set up effective anti-bribery measures.<sup>8</sup>

We also contribute to the small but growing literature on the impact of the UK BA. After Zeume (2017), some studies have shown that the passage of the law has increased the number of disclosures (Islam et al., 2021) and reduced the cost of equity amongst UK firms with high bribery exposure (Kim et al., 2020). Moreover, there is also evidence that US multinationals rearranged their international operations and closed subsidiaries in highly corrupt countries after the passage of the UK BA (Sanseverino, 2021).

Finally, we contribute to the more general literature on corruption by proposing the use of audit fees as a measure of the costs of hiding bribery at the firm level. Because of the difficulty in observing firms' illegal activities, empirical results on corruption have mainly focused on direct field studies (Olken & Barron, 2009), lab experiments (Abbink et al., 2002) and questionnaires (D'Souza & Kaufmann, 2013). As Burguet, Ganuza, and García-Montalvo (2016) discuss, each of these measures has problems of its own. Our paper contributes to this literature by providing a causal estimate that has international validity and is based on an objective and commonly reported

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<sup>8</sup> One example is KPMG, who state that "The UK Bribery Act (UK Act), which came into effect in 2011, is currently the most rigorous anti-bribery legislation in the world....We can provide a full range of services from proactive compliance through to investigations to help you identify and mitigate the risks". <https://home.kpmg/xx/en/home/insights/2014/03/the-abc-of-abc.html>

measure of fees.

The remainder of the paper proceeds as follows. In the next section, we discuss the main differences between the UK BA and previous anti-bribery legislation and the expected impact that these characteristics may have on client firms and their auditors. This analysis leads us to derive our main testable hypothesis. Section 3 explains in detail our quasi-experimental research design, presenting the empirical methods and the variables we use to identify changes in audit pricing and financial reporting quality after the law. In Section 4 we discuss the main results. Robustness checks are presented in Section 5. Finally, in Section 6 we conclude.

## **II. INSTITUTIONAL SETTING AND DEVELOPMENT OF HYPOTHESES**

### **The UK Bribery Act 2010**

The Bribery Act of 2010, unlike any previous legislation, imposed strict liabilities upon both UK and non-UK firms with a UK subsidiary for failing to impede bribes, either received or given. The charges may include unlimited fines and imprisonment. The peculiarity of this legislation is that any UK-associated person may be prosecuted; regardless of the place where the bribery takes place. “Associated person” could be the company’s employees, agents, joint venture partners or subsidiaries established in the UK. For example, a non-UK firm with a UK subsidiary is liable under the Act even if the bribery takes place outside the UK by a non-UK subsidiary or by the non-UK parent company (e.g., the Airbus prosecution case). The UK BA also improves detection of the crime by providing guidance for companies on how to protect whistleblowers. The enforcement agencies responsible for investigating and prosecuting the cases under the UK BA are the Serious Fraud Office for the UK and the Director of Public Prosecutions for extraterritorial prosecutions cooperating through mutual legal assistance with other countries.

## **Increase in Client Business Risk**

Client business risk is associated with the survival and profitability of the company. The UK BA increased the business risk of the subject firms because of higher litigation costs and higher compliance costs.

### ***Increase in litigation risk.***

For a given level of bribery, litigation risk is a function of both the probability of detection and expected sanctions in the event of detection. Both parameters were higher for bribe-paying firms under UK jurisdiction after the passage of the UK BA.

For non-UK firms, the probability of detection increases because they are now subject to an additional anti-bribery law, and can be prosecuted by UK authorities, irrespective of any previous regulation enforced in their countries of incorporation.<sup>9</sup> For UK firms, prior anti-bribery laws<sup>10</sup> had been enacted in the late 1800s and early 1900s and were considered outdated and inadequate for detecting the bribery of foreign officials in international business transactions. This is in sharp contrast to the number and prominence of the 99 cases prosecuted after a decade of the passage of the UK BA (information about some of the cases can be found in Appendix B). Although this number may seem small, it can be put into perspective considering that the US FCPA only had 21 convictions in the first 10 years of its enforcement.<sup>11</sup>

Regarding potential sanctions associated with bribery, the UK BA imposes unlimited fines and a maximum of 10 years' imprisonment.<sup>12</sup> This represents a sharp increase in comparison to both

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<sup>11</sup> Moreover, the director of the UK Serious Fraud Office (SFO), Lisa Osofsky, speaking at the 35th International Conference on the Foreign Corrupt Practices Act in 2018 in Washington DC, stated that there were at the time 70–75 cases pending trial for investigations relating to bribery and “dozens of bribery cases in the investigation pipeline—just over half of our docket”.

<https://www.sfo.gov.uk/2018/12/04/keynote-address-fcpa-conference-washington-dc/>, accessed January 11, 2021.

previous UK legislations (maximum fine of £500 and two years' imprisonment), and legislations in other jurisdictions, such as the US Foreign Corrupt Practices Act (FCPA) (1977) and the OECD Anti-Bribery Convention (1997). A detailed comparison of the UK BA and the FCPA, showing the relative severity of the UK BA, is provided in Appendix C.

***Increase in compliance costs.***

The UK BA applies a strict corporate liability criterion if a firm failed to implement anti-bribery procedures to prevent bribery. Specifically, the UK Ministry of Justice issued a detailed guideline to procedures, the “UK Bribery Act 2010, guidance”. It states that the adequate procedures depend on the risks of bribery and on the nature and complexity of the organization's activities. Accordingly, all firms under UK jurisdiction have higher compliance requirements after the UK BA, but firms that operate in riskier environments characterized by a higher probability of bribery, will face greater obligations. Internal audit procedures (such as reinforced checks on third business parties) are crucial for the application and effectiveness of the required anti-bribery procedures. Top management and boards of directors are made responsible for implementing the procedures.

***Increase in auditor's costs and risks.***

How does this increase in client business risk affect the external auditor's risk? We analyze this issue following Simunic (1980), model explaining how the costs and risk of a period's audit affect audit fees.

$$E(C) = cq + E(d) * E(\theta) \quad (1)$$

where  $E(C)$  equals audit fees,  $c$  equals the factor cost of the external audit resources, including the opportunity costs, and  $q$  is the quantity of resources that an auditor uses during the audit.  $E(d)$  is the expected present value of the future losses an auditor may incur from a period's audited financial statements, and  $E(\theta)$  is the likelihood that the auditor will have to cover these losses



(Seetharaman et al., 2002). It is important to notice that this model deals with expectations. Since we are measuring the impact of the UK BA around its enactment, any impact we observe will be based on the expectations that auditors had at that time. Of course, these expectations were likely to be lower than the maximum potential sanctions described in Appendix C and different from the actual sanctions observed years later (discussed in Appendix B). Nevertheless, Zeume's (2017) finding of a significant decline in the share price of the companies that were subject to the Act indicates the market discounted a significant surge in prosecution and fines.<sup>13</sup>

#### ***Increase in auditor's verification costs.***

The most obvious effect of the passage of the UK BA for auditors relates to the additional compliance obligations for the subject firms (direct increase in *cq*).<sup>14</sup> According to Pacini, Swingen and Rogers (2002), auditors are responsible for verifying that the firm complies with the procedures that relate to bribery. They are also generally responsible for ensuring compliance with the regulatory framework which applies to their client (AU-C 250). Therefore, the passage of the UK BA should generally imply a higher cost of the audit for all subject firms. However, it is unclear whether this impact can be significant in the context of audits on the large international firms in our sample. Although the firm may need to make a large investment in anti-bribery procedures, the auditor only needs to verify that such procedures are in place.

#### ***Increase in auditors' business risk.***

Auditors are subject to engagement risk defined as "the loss or injury from litigation, adverse

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<sup>13</sup> Interestingly, 2010 also marked a significant shift in the UK political environment. In May 2010 the UK elected a Conservative-led coalition to replace the Labour party, which had been in power for the previous thirteen years. Investors may have expected more "business friendly" policies and fewer enforcement actions. This may have reduced the market's reaction and also goes against finding any impact of the passage of the UK BA (enacted in July 2010) on audit fees.

<sup>14</sup> A detailed explanation of compliance costs related to bribery is found in Maher (1981), who discusses how auditors should deal with the compliance costs triggered by the introduction of the U.S. FCPA. Moreover, Bronson, Ghosh, and Hogan (2017) and Minutti-Meza (2014) show that increases in audit requirements (i.e., increases in compliance costs for auditors of US cross-listed firms, contribute to higher audit fees).

publicity, or other events arising in connection with the audited financial statements” (Statements of Auditing Standards, SAS 106). Therefore, as the risk of litigation increased for bribe-paying firms subject to the UK BA, the auditors’ business risk arising from engaging with these firms, as reflected in the term  $E(d) * E(\theta)$ , also increased.

In particular, even if auditors comply with all anti-bribery procedures and auditing standards, they can still face a lawsuit (AICPA Statements of Auditing Standards 107, footnote 2). This is true even when auditors provide correct audit opinions (AICPA 1993). Thus, bribe-paying clients expose auditors to potential shareholder litigation (Lyon & Maher, 2005). Litigation threats can have a detrimental effect even for the largest auditing firms because, although these firms are better prepared to deal with the fixed costs of litigation, financial penalties usually increase with size (DeFond & Zhang, 2014).

Moreover, auditors will also bear the direct costs of adverse publicity from a lawsuit against the client firm, regardless of the verdict.<sup>15</sup> This is because, if the market suspects that the client engages in illegal activities, there will be a spillover effect on the market’s perception of audit quality (Lyon & Maher, 2005). In particular, previous academic literature has shown that reputation damage is detrimental to auditors and their clients (Chaney & Philipich, 2002; Cahan et al., 2009; Krishnamurthy et al., 2006; Venkataraman et al., 2008; Skinner & Srinivasan, 2012).

### ***Increase in auditors’ audit risk.***

The effort required to ensure there are no material misstatements in the accounts may increase when bribe-paying firms face higher litigation risks. According to auditing standards, auditors are responsible for identifying any fraudulent activities (Cuervo-Cazurra 2008). Moreover, auditing

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<sup>15</sup> For example, Congressman John E. Moss highly criticized the auditor of Ashland Oil after it was revealed that the company was engaged in bribe-related activities (US House of Representatives 1976). It can be found at the following link: <https://www.justice.gov/sites/default/files/criminal-fraud/legacy/2010/04/11/houseprt-95-640.pdf>.

standards provide the auditors with guidance for identifying alarming factors that increase the likelihood of fraud or bribes, such as large or unexplained payments to government officials (PCAOB AS 2405). Furthermore, the OECD's Anti-Bribery Convention (2017) requires external auditors to "report suspected acts of foreign bribery internally to management or corporate monitoring bodies and consider requiring them to report to competent external authorities". But, when client firms pay bribes, they try to conceal them in the accounts through schemes such as failure to record a transaction, intentional misrepresentations or omissions which hinder their detection. And the need for secrecy and concealment will increase with the potential litigation costs for the firm. According to ISA 240, these schemes are intended to make the auditor believe that the evidence is persuasive enough and free of material misstatements, which might be wrong (IFA, 2010). Consequently, when a client firm has a higher litigation risk, the auditor might decide to exert additional testing, such as investigating the bidding process of public sector contracts and reviewing unusually large payments in the banking records or those made through offshore companies. In summary, we conclude that there may be an upward shift in audit risk for auditors whose potentially corrupt clients are subject to the UK BA and this will result in an indirect increase in  $cq$  if the auditor decides to increase efforts to conduct additional testing.

### **Overall Impact of the UK BA on the Audit Fees of the Subject Firms**

We have already established that, after the passage of the UK BA, the cost of verifying compliance with the law could imply a direct increase in audit fees (direct increase in  $cq$ ) for all subject firms relative to non-subject firms. However, it is unclear whether these extra verification costs are large enough to justify an increase in fees.

On the other hand, all other potential effects depend on the auditor's expectations of the likelihood that the firm engages in bribery. If the auditor suspects the firm of bribery, one could expect a

substantial increase in audit fees because of both the increase in the auditor's business risk (increasing  $E(d) * E(\theta)$ ) and the increased audit risk (indirectly increasing  $cq$ ). Nevertheless, the objective of the UK BA is to curb bribery at the firm level. Effective anti-bribery legislation produces a spike in the costs of bribery, therefore discouraging corruption. And, if the Act works as a significant deterrent, it will reduce the likelihood of bribery and result in a drop in the audit fees. Moreover, a third possibility would be weak enforcement of the UK BA that would not change the probability of bribery or the expected costs of engaging in corruption, neither for the firm nor the auditor.

Therefore, to derive clear testable hypothesis as to the effect of the UK BA on audit fees we need to identify groups of firms according to their likelihood of engaging in bribery. Specifically, what we need is to identify firms with a higher relative likelihood of engaging in bribery before the passage of the UK BA.

### **Testable Hypothesis Depending on Exposure to Corruption**

Prior literature has shown that firms' bribery levels differ across countries for both moral and legal reasons, which are likely to be interrelated. In particular, the legal environment can be seen as the image of the ethical and moral standards of society (Gago-Rodríguez et al., 2020). Focusing on the impact of regulation on firm incentives, Shleifer and Vishny (1993) argue that firms operating in less developed countries are more likely to engage in bribery because of the lack of strong institutional and legal environments. According to Bond (2008), Brunetti and Weder (2003) and Wu (2009), this happens because in weak regulatory environments firms are encouraged by the lower likelihood of prosecution, implying lower litigation risk. But, it may also occur because "corruption corrupts" and weaker institutions lead to higher expectations of bribes by corrupt officials (Andvig & Moene, 1990; Brooks & Dunn, 2004). These ideas are confirmed by D'Souza

and Kaufmann (2013), who show that strong legal institutions are associated with lower bribery at the firm level. Taken together, all these arguments suggests that the probability that firms where paying bribes (and their amount) before the passage of the UK BA was positively associated with the country's corruption level, as measured by the Corruption Perceptions Index (CPI) compiled by Transparency International (Christensen et al., 2021).

Taking all of this into account, to formulate our hypothesis we will distinguish between firms that operate in business environments with high exposure (HE) versus low exposure (LE) to corrupt practices as a proxy for the a priori likelihood that the firm used bribes before the passage of the law.

Our first testable hypothesis refers to the impact of the Act on the audit fees paid by firms operating in LE environments. LE firms did not pose significant risks for the auditor either before or after the passage of the UK BA. The only significant change of the UK BA for the auditor of these firms is the additional cost of ensuring that subject firms have implemented the anti-bribery procedures required to comply with the new regulation.

***H1:** For firms operating in LE environments, the UK BA should increase the audit fees of the subject firms proportionally to the increase in the auditor's cost of verifying firms' compliance with the new law.*

Our second testable hypothesis refers to differences in the impact of the law for HE versus LE firms. HE firms are expected to pay higher audit fees relative to LE firms before the passage of the law. After the passage of the new law, if HE subject firms continue (are deterred from) paying bribes, the auditor's risks increase (decrease) and the fee differential with subject LE firms should increase (decrease).

***H2:** For subject firms, the UK BA should increase the difference between the audit fees of HE*

*firms and LE firms in proportion to the change in the auditor's business and audit risks.*

Our final hypothesis refers to the additional monitoring efforts that the auditor may undertake to reduce the risk when dealing with HE firms. If subject companies continue using bribes after the passage of the UK BA with anti-bribery procedures in place, discovering illegal activities may require more resources and effort on the part of the auditor and this would increase audit risk. To determine the extent to which the increase in audit fees is due to higher auditor effort we will look for changes in audit quality. Our basic assumption is that higher audit effort should be reflected in increased audit quality.

***H3:** For subject firms, if the change in audit fees after the passage of the UK BA is caused by an increase in auditors' monitoring efforts, we should observe an increase in the audit quality of HE firms relative to LE firms.*

### **III. RESEARCH DESIGN**

#### **Data, Variables and Empirical Model**

To test the hypotheses developed in Section 2 we use a panel data set of international firms with annual information on audit fees for the years 2006 to 2012. To determine whether a firm is subject to the UK BA we require data on its subsidiaries which we took from the Orbis database. We commenced with 18,207 unique listed and major un-listed/delisted industrial companies from around the world that had at least one subsidiary in which the parent company held >50% direct ownership in 2018. After obtaining the incorporation date of the subsidiaries, our sample amounted to 6,363 publicly listed firms whose subsidiaries were incorporated in 2006 or prior to that year. We removed financial and insurance firms from our sample.

In the second step, we collected information on audit fees from Thomson Reuters Worldscope and consolidated financial statements from the Osiris database. After merging and deleting firms with

missing information, our final sample of firms includes 2,559 firm-year observations. Detailed analysis on the sample compositions can be found in the online appendix in Section IA 1.

We use this sample to estimate the following triple-difference regression model in equation (2):

$$\begin{aligned} \text{Audit fees}_{i,t} = & \alpha_i + \beta_1 \text{Exposed}_{i,t} + \beta_2 \text{Subject}_i + \beta_3 \text{Exposed}_{i,t} \times \text{Subject}_i + \gamma_0 \text{Post}_t + \\ & \gamma_1 \text{Post}_t \times \text{Exposed}_{i,t} + \gamma_2 \text{Post}_t \times \text{Subject}_i + \gamma_3 \text{Post}_t \times \text{Exposed}_{i,t} \times \text{Subject}_i \\ & + \delta \text{Controls}_{i,t} + \phi \text{Industry}_{i,t} + \xi_{i,t} \end{aligned} \quad (2)$$

“*Audit fees*” is measured as the natural logarithmic of audit fees in US dollars for each firm  $i$  in each year  $t$ .<sup>16</sup> To measure the impact of the UK BA on audit fees we construct three indicator variables: *Post*, *Subject* and *Exposure*. *Post* is a binary indicator that takes the value one after the passage of the BA and zero before. The UK BA was passed on March 25, 2009, but received its Royal Assent on April 8, 2010.<sup>17</sup> Even though its enforcement was initially scheduled to start in April 2010, eventually the law was enforced on July 1, 2011. However, companies had expected its enforcement in June or July 2010. To the extent that in 2009 it was not certain whether the law would be enacted, we delete 2009 from our regression analysis and we consider 2010 as our event year (interestingly, our results hold even if we keep the year 2009). Hence, our *Post* variable is a dummy that takes the value of one for years in the post period 2010–2012 and zero for years in the pre-period 2006–2009.

*Subject* takes the value one for company  $i$  if company  $i$  is either incorporated in the UK or had a UK subsidiary prior to the passage of the Act, and zero otherwise. One possible consideration is that firms could respond to the Act by closing their subsidiaries in countries perceived as corrupt or even in the UK.<sup>18</sup> To eliminate such concern, our subject sample consists of firms that were

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<sup>18</sup> Sanseverino (2020) finds that US multinationals were likely to discontinue operations in high corruption countries after the passage of the UK BA.

incorporated in the UK or had a UK subsidiary both before and after the passage of the UK BA.<sup>19</sup>

*Exposed* measures the exposure of firm  $i$  to corrupt practices in the business environment where it operates in year  $t$ . Following Zeume (2017) we estimate the overall exposure of the firm as the sum of all its subsidiaries' exposure to corruption according to the subsidiary country Corruption Perceptions Index as follows:

$$Exposure_{i,t} = \sum_{c=1}^N (10 - CPI_{c,t}) \frac{\#Subsidiaries_{i,c,t}}{\#Subsidiaries_{i,t}} \quad (3)$$

where  $CPI_{c,t}$  is the Corruption Perceptions Index (CPI) of country  $c$  in year  $t$ .  $\#Subsidiaries_{i,c,t}$  is the number of subsidiaries incorporated in country  $c$  and owned by firm  $i$  in year  $t$ . The total exposure of a firm is the sum of all of its exposures coming from all of its subsidiaries.<sup>20</sup> The CPI takes values from 0 to 10, with 0 indicating higher levels of corruption. Thus, by construction, an increase in our measure indicates higher exposure to corrupt countries. Then, we finally define our *Exposed* variable as an indicator variable that takes the value one if the CPI for firm  $i$  is above or equal to the median sample in year  $t$  and zero otherwise.<sup>21</sup> It is important to note however, that to use the exposure measure, we need to assume that the subsidiaries do business in the countries where they operate.

*Controls* denotes an extensive set of control variables taken from previous studies to capture firm characteristics that may have an impact on audit fees. Information on the choice of the control variables can be found in the online appendix in Section IA1. Detailed variable definitions and

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<sup>19</sup> This restriction biases our results in that it makes it less likely to find any impact of the passage of the UK BA on audit fees, because the firms for which the new law was costlier are more likely to be the ones that either changed their country of incorporation or closed their UK subsidiaries following the passage of the law.

<sup>20</sup> This measure assumes that each subsidiary is equally important to the firm. An alternative measure would consider the revenues generated by each subsidiary. Untabulated analysis yields similar results.

<sup>21</sup> In untabulated analysis, we used alternative dummy specifications, assigning the value of one to "Exposure" if the corruption exposure of the firm is in the 8th, 9th or 10th quartile and zero if it is in the 1st, 2nd or 3rd quartile. The main results remain the same. Additionally, we introduced the exposure measure as a continuous variable with no significant changes in results. For ease of interpretation, we present our results taking exposure as a zero/one dummy variable relative to the median value of the sample.



data sources for each of them are presented in Appendix A.<sup>22</sup>

To control for time-invariant unobserved heterogeneity at the firm level, we include  $(\alpha_i)$  firm fixed effects in all the regressions. We also account for the factors that are common within each industry and year using year-industry fixed effects ( $Industry_{i,t}$ ).<sup>23</sup> Finally, in all the regressions in this paper, we cluster the standard errors at country level. For the interpretation of the triple difference variables, please see the online appendix section IA 3.

### **Identifying Changes in Auditors' Monitoring Efforts**

We have argued that a potential increase in audit fees in reaction to the passage of the UK BA may correspond either to an insurance premium for the additional reputational/litigation costs borne by the auditor or to higher monitoring effort on the part of the auditors. Moreover, we expect any additional monitoring efforts to be reflected in higher audit quality.

The major challenge in this case is to find a good proxy for audit quality in relationship to bribes. Although not directly related to bribes, accounting restatements and/or the likelihood of a qualified audit opinion are commonly used in the audit literature as a measure of audit quality (DeFond & Zhang 2014). However, these variables are not available at the international level.

Bribe-related payments may take different forms such as unusual fines or penalties, unspecified services to consultants, affiliates or employees, excessive sales commissions or agent fees, large cash payments, cashier's checks, bank accounts, and similar, unexplained payments made to government officials or employees, failure to file tax returns or pay government duties or similar fees, and so forth. Most of these items would usually be book-recorded as operating expenses, so

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<sup>22</sup> All continuous variables are winsorized at the 1% and 99% levels.

<sup>23</sup> All regressions in our paper also include year fixed effects (not interacted with industry dummies) to capture the shocks that may affect firms similarly within a specific year. We have also tried using country-year fixed effects and the results remain the same.

one could expect companies that engage in bribery to have higher abnormal operating expenses. Of course, recording any bribes directly as expenses is typified as illegal by SAS 54 and ISA 240, but anecdotal evidence indicates that bribes are usually hidden in different disguises in the operating expenses component of the income statement.<sup>24</sup> Therefore, a good proxy for an increase in audit quality caused by higher perceived costs of bribery would be a reduction in abnormal operating expenses.

Taking this into account, we repeat our main analysis changing the dependent variable to “*Abnormal operating expenses*”, which we measure following the model of Dechow, Kothari, and Watts (1998), as modified by Roychowdhury (2006). Specifically, we build our abnormal operating expenses variable running the following regression for every industry and year.<sup>25</sup>

$$\frac{OPEX_{i,t}}{A_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{A_{i,t-1}} + \beta_2 \frac{S_{i,t-1}}{A_{i,t-1}} + \varepsilon_{i,t} \quad (4)$$

where, OPEX stands for operating expenses at the end of the period,  $A_{i,t-1}$  is total assets at the end of the previous period, and  $S_{i,t-1}$  is total sales at the end of the previous period. For every firm-year, abnormal operating expenses are actual operating expenses minus “normal” operating expenses derived from equation (4) using the estimated coefficients from this industry-year model, the lagged sales, and lagged assets of the firm.

## IV. RESULTS

### Summary Statistics and Correlations

Summary Statistics are presented in Table 1. Panel A shows the summary statistics of the entire

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<sup>24</sup> A number of prosecutions under both the UK BA and FCPA lead to that conclusion. For example, the Braid Group’s employees, in an attempt to hide bribes, created an expenses account funded by dishonest invoices. Sweet Group Company, used a fake fees account as a way of covering up bribe activities. Avon Products Inc. (FCPA prosecution) was found guilty of bribing Chinese officials hiding payments in the “meal and entertainment expenses,” “gifts,” and “travelling expenses.” Another example is the Goodyear company (FCPA prosecution) where bribes were hidden through “freight expenses.” Bio-Rad (FCPA prosecution) classified bribe activities as advertising fees, commissions, or training fees.

<sup>25</sup> All equations are estimated per industry and year and we require at least 10 observations in a given industry-year group.

sample for the pre-BA period relating to the years 2006–2008 and the post-BA period covering 2010–2012. Panel A shows that our overall sample consists of large firms that, on average, have good growth prospects but low performance. In general, our variables are in accordance with the previous literature that has studied international firms (Lawson et al., 2009).

In Panel B, we see the summary statistics of the firms that are under the jurisdiction of the UK courts (Subject) compared to the group of firms that are not (Non-Subject) prior to the passage of the Act (years 2006–2008). On average, subject firms exhibit higher audit fees, lower exposure, and are more likely to be audited by a Big 4 auditor. Both sets of firms have similar abnormal operating expenses. The two groups, however, are quite different as they differ in most of the variables. For this reason, in our main analysis, we will perform entropy balancing, as explained below.

The correlations between our main dependent variables and control variables are set out in Table 2. The bottom-left corner shows the Pearson correlation coefficients and the top-right corner the Spearman correlations. We observe that audit fees are significantly and positively correlated with our exposure measure, which is consistent with the assumption that auditors perceive firms that operate in highly corrupt environments as riskier.

### **Testing for Identification Assumptions**

Our identification strategy is based on measuring the changes in the audit fees that firms must pay after a shock to the cost of bribery in the form of the passage of the UK BA. This identification strategy is appropriate only if our legal shock meets certain conditions. Apart from the parallel trends assumption that is discussed below, the rest of the conditions are discussed extensively in the online appendix in Section IA3.

### ***Parallel trends.***

The triple difference estimator requires a parallel trend assumption for the estimated effect to have a causal interpretation (Atanasov & Black, 2016; Christensen et al., 2017). In our case, the requirement is that before the UK BA, the difference in audit fees between HE and LE firms in the group of subject firms was trending (i.e., moving) the same way as the difference in audit fees between HE and LE firms in the group of non-subject firms. This implies that in the absence of the UK BA, the relative changes to audit fees of HE firms would have been the same for subject and the non-subject groups of firms.

To assess the validity of the parallel trends assumption, we perform entropy balancing and run an OLS regression where we interact our Subject and Exposure variables with year dummies for the years before and after the enforcement of the Act (excluding year 2009 due to a potential expectations bias in that year). The equation is as follows:

$$\begin{aligned} \text{Audit fees}_{i,t} = & \alpha_0 + \sum_{t=2006}^{2014} \beta_{1,t} T_t + \beta_{2,t} T_t \times \text{Exposed}_{i,t} + \beta_{3,t} T_t \times \text{Subject}_{i,t} + \beta_{4,t} T_t \times \\ & \text{Exposed}_{i,t} \times \text{Subject}_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (5)$$

Figure 1 shows the counterfactual effects for the triple interaction (DiDiD). The counterfactual effects in the three years prior to the UK BA are insignificant, which indicates that there is no significant trend in audit fee differentials (HE versus LE) between subject and non-subject firms. Moreover, any firm-related differences between HE and LE firms will be eliminated after the inclusion of firm fixed effects in our main regression.

### **The Effect of the UK Bribery Act on Audit Fees**

To test our first and second hypotheses we run equation (2). Table 4 columns (1) to (3) present the results of this DiDiD analysis for the entire sample of firms. Hypothesis 1 refers to differences between subject and non-subject firms that operate with LE. We do not observe any differences

between these two groups, which indicates that the additional compliance costs for subject firms did not translate into significant verification costs for the auditors.

The results in Table 4 also confirm Hypothesis 2 because for subject firms (but not for non-subject firms) we observe an large increase in the difference in audit fees between HE and LE firms. Specifically, there is a 0.8 standard deviation  $[(\exp(-0.168+0.381)/\sqrt{2.42})]$  increase or an approximate 8.5 percentage-point  $[(\exp(-0.168+0.381)/14.56)]$  increase in the audit fees of HE firms subject to the UK BA compared to HE non-subject firms. We also observe a 0.9 standard deviation  $[(\exp(0.381)/\sqrt{2.42})]$  increase or an approximate 10 percentage-point  $[(\exp(0.381)/14.56)]$  increase in the difference in audit fees for HE and LE subject firms relative to HE-LE non-subject firms.

Unfortunately, this indicates that auditors did not perceive a significant deterrence effect of the UK BA in HE environments. This would be consistent with the idea that in corrupt environments paying bribes may be a necessary cost of doing business and, therefore, even after the passage of the UK BA, subject firms need to engage in bribery to obtain contracts and compete effectively in these countries. For these firms the UK BA represents an increase in the cost of doing business and, in turn, the auditors of these firms demand higher audit fees to compensate for the extra perceived risks they are assuming.

Overall, our evidence regarding Hypothesis 2 shows a causal impact of corruption on audit fees since the UK BA provoked an increase in the audit fees of HE subject firms relative to LE subject firms, while for non-subject firms there is no impact on the difference in fees between HE and LE firms. Our results for Hypothesis 1 allow us to rule out the increase in verification costs of compliance as the driver of this increase. Still, the increase may be due to an increase in business risk or/and an increase in audit risk arising from higher monitoring costs. Our next tests on

auditors' efforts and changes address this issue and can be found in the online appendix in Section IA 4.

## **V. ROBUSTNESS CHECKS**

We conduct a battery of robustness tests to ensure that our results are not the result of the choices we made in our identification strategy. In the main text, for the sake of brevity, we briefly present the results. In the online appendix, in Section IA 6, we analyze the robustness checks in detail.

In particular we test and find robust results using (i) alternative sample periods with four- and five-year windows and also dropping year 2010. Results are shown in Table 7, panel A ; (ii) subsamples where we drop US and cross listed firms subject to FCPS regulation and non-OECD firms as these are comparable to the UK BA in Table 7, panel B; (iii) alternative exposure measures such as the Bribe Payers Index (BPI) and the World Governance Indicators (WGI) in Table 8, panel A; (iv) a financial exposure index to test confounding effects of the financial crisis, measuring the impact of the financial crisis using the percentage change of the gross domestic product (GDP) per capita from 2008 to 2009 in Table 8, panel B; (v) alternative matching procedure using the propensity score matching (PSM) method in Table 9, panel A and Figure 2; and (vi) placebo tests of the law, assigning it to different countries and firms in Figure 3. We also conduct three robustness tests on the variables directly related to audit costs and outcomes. We find, in Table 9, panel B, that less complex firms face higher audit fees compared to non-complex firms indicating that verification costs are unlikely to be the main determinants of audit fees. We also use alternative proxies to audit quality in Table 9, panel B (columns (3) – (5)) and results remain the same as in Table 5.

## VI. CONCLUSION

Corruption imposes high costs on the economy.<sup>26</sup> At the firm level, bribery seems to be worryingly common. But, because bribery is an illegal activity, almost all data estimating the extent of these practices at the firm level are indirect.<sup>27</sup> This is also a problem for researchers concerned with the role that auditors and accountants can play in preventing bribery (Cooper et al., 2013). In this paper we prove that audit fees increase with the likelihood of bribery at the individual firm level.<sup>28</sup> To prove the causal relationship between bribery and audit fees we use a triple-difference design, exploiting the enactment of the UK Bribery Act in 2010 as a shock to the costs of engaging in bribery activities for firms under UK jurisdiction and their auditors. Our main result shows that, for HE firms subject to the UK BA, there is a substantial increase in audit fees.

We run various tests to tease out the different potential reasons that might explain this causal relationship between the passage of the UK BA and the increase in audit fees of firms operating in corrupt environments. First, we show that LE subject firms experience no change in audit fees relative to non-subject firms. Second, our results indicate that the quality of financial reporting does not change after the passage of the UK BA. Therefore, the increase in audit fees must be explained by the increase in reputational costs for the auditor. Overall, our research design allows us to contribute to the literature on audit fees by showing a causal relationship between an increase

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<sup>26</sup> Corruption has been shown to increase income inequality and decrease growth and investment (Burguet et al., 2016; Mauro, 1995; Mo, 2001).

<sup>27</sup> D'Souza and Kaufmann (2013), surveying 11,000 companies in over 125 countries, show that one third of managers are willing to pay bribes to obtain public contracts. Direct estimates can be obtained in field studies such as Olken and Barron (2009) and Sequeira and Djankov (2014), but they are difficult to generalize.

<sup>28</sup> Our research design has some limitations. First, we only use companies that do not change their country of incorporation or their subsidiaries after the enactment of the UK BA, which are probably less affected by the Act. Additionally, our sample is biased towards large firms incorporated in developed countries, which probably had better anti-bribery procedures and more control mechanisms both before and after the enactment of the UK BA. Furthermore, our corruption-exposure measure relies on the assumption that subsidiaries operate mainly in their country of incorporation. All of these imply that we are very likely to underestimate the impact of corruption on audit fees. Finally, on a more positive note, the evidence in the paper also shows that regulatory attempts to reduce bribery can have a significant impact.

in the auditors' reputational costs and an increase in the audit fees for the client firms. This result, unfortunately, is not surprising, but its economic significance – which amounts to an average increase of 8.5% in audit fees – highlights the widespread occurrence and importance of a first-order social and economic problem that we find easier to ignore when we cannot measure it.



## References:

1. Abbink, K. (2002). An Experimental Bribery Game. *Review of Accounting Studies* 18 (2): 428–454.
2. Amiram, D., Bozanic, Z., Cox, J. D., Dupont, Q., Karpoff, J. M., Sloan, R. (2018). Financial reporting fraud and other forms of misconduct: a multidisciplinary review of the literature. *Review of Account Studies* 23 (2): 732–783.
3. Andvig, J. Chr., Moene, K. O. (1990). How corruption may corrupt. *Journal of Economic Behavior & Organization* 13 (1): 63–76.
4. Angrist, J. D., Pischke, J. S. (2010). The credibility revolution in empirical economics: How better research design is taking the con out of econometrics. *Journal of Economic Perspectives*, 24(2), 3–30.
5. Armantier, O., Boly, A. (2011). A controlled field experiment on corruption. *European Economic Review* 55 (8): 1072–1082.
6. Atanasov, V., Black, B. (2016). Shock-Based Causal Inference in Corporate Finance and Accounting Research. *Critical Finance Review* 5 (2): 207–304.
7. Bell, T. B., Landsman, W. R., Shackelford, D. A. (2001). Auditors' Perceived Business Risk and Audit Fees: Analysis and Evidence. *Journal of Accounting Research* 39 (1): 35–43.
8. Bond, P. (2008). Persistent Court Corruption. *Economic Journal* 118 (531): 1333–1353.
9. Bronson, S. N., Ghosh, A. A., Hogan, C. E. (2017). Audit Fee Differential, Audit Effort, and Litigation Risk: An Examination of ADR Firms. *Contemporary Accounting Research* 34 (1): 83–117.
10. Brooks, L. J., Dunn, P. (2004). Business and professional ethics for directors, executives, and accountants, 3rd edition, South-Western University Publishing, Cincinnati, OH.
11. Brunetti, A., Weder, B. (2003). A free press is bad news for corruption. *Journal of Public Economics* 87 (7–8): 1801–1824.
12. Burguet, R., Ganuza, J. J., Garcia-Montalvo, J. (2016). The microeconomics of corruption: A review of thirty years of research. Working paper. Available at: <https://bse.eu/research/working-papers/microeconomics-corruption-review-thirty-years-research> (last accessed November 16, 2021)
13. Cahan, S. F., Emanuel, D., Sun, J. (2009). Are the Reputations of the Large Accounting Firms Really International? Evidence from the Andersen-Enron Affair. *AUDITING: A Journal of Practice & Theory* 28 (2): 199–226.
14. Carey, P., Simnett, R. (2006). Audit Partner Tenure and Audit Quality. *The Accounting Review* 81 (3): 653–676.
15. Chaney, P. K., Philipich, K. L. (2002). Shredded Reputation: The Cost of Audit Failure. *Journal of Accounting Research* 40 (4): 1221–1245.
16. Christensen, H. B., Floyd, E., Liu, L. Y., Maffett, M. (2017). The real effects of mandated information on social responsibility in financial reports: Evidence from mine-safety records. *Journal of Accounting and Economics* 64 (2–3): 284–304.
17. Christensen, H. B., Maffett, M. G., Rauter, T. (2021). Policeman for the World: The Impact of Extraterritorial FCPA Enforcement on Foreign Investment and Internal Control. *The Accounting Review*.
18. Cooper, D. J., Dacin, T., Palmer, D. (2013). Fraud in accounting, organizations and society: Extending the boundaries of research. *Accounting, Organizations and Society* 38 (6–7): 440–457.
19. Cuervo-Cazurra, A. (2008). The effectiveness of laws against bribery abroad. *Journal of International Business Studies* 39 (4): 634–651.
20. D'Souza, A., D, Kaufmann. (2013). Who bribes in public contracting and why: worldwide evidence from firms. *Economics of Governance* 14 (4): 333–367.
21. Dechow, P. M., Dichev, I. D. (2002). The Quality of Accruals and Earnings: The Role of Accrual Estimation Errors. *The Accounting Review* 77 (s-1): 35–59.
22. Dechow, P. M., Kothari, S. P., Watts, R. L. (1998). The relation between earnings and cash flows. *Journal of Accounting and Economics* 25 (2): 133–168.
23. DeFond, M., Zhang, J. (2014). A review of archival auditing research. *Journal of Accounting and Economics* 58 (2–3): 275–326.

24. Francis, J., LaFond, R., Olsson, P., Schipper, K. (2005). The market pricing of accruals quality. *Journal of Accounting and Economics* 39 (2): 295–327.
25. Gago-Rodríguez, S., Márquez-Illescas, G., Núñez-Nickel, M. (2020). Denial of Corruption: Voluntary Disclosure of Bribery Information. *Journal of Business Ethics* 162 (3): 609–626.
26. Garven, S. A., Beck, A. W., Parsons, L. M. (2018). Are Audit-Related Factors Associated with Financial Reporting Quality in Nonprofit Organizations? *Auditing: A Journal of practice and Theory* 37 (1): 49–68
27. Ghosh, A., Tang, CY. (2015). Auditor resignation and risk factors. *Accounting Horizons*, 29(3), pp.529-549.
28. Houque, M. N., Zijl, T. Van Waresul, Karim, A. K. M., Mahoney, A. (2019). What is the impact of corruption on audit fees? *Public Money & Management* 39 (2): 123–131.
29. Islam, MA., Haque, S., Henderson, S., Jones, M. J., Semeen, H. (2021). Corporate disclosures on curbing bribery and the UK Bribery Act 2010: evidence from UK companies. *Accounting, Auditing & Accountability Journal* 34 (8): 1851-1882.
30. Jha, A., Kulchania, M., Smith, J. (2021). U.S. Political Corruption and Audit Fees 96 (1): 299–324.
31. Jones, J. J. (1991). Earnings Management During Import Relief Investigations. *Journal of Accounting Research* 29 (2): 193.
32. Kim, S., Rees, W., Sila, V. (2020). Do Anti-Bribery Laws Reduce the Cost of Equity? Evidence From the UK Bribery Act 2010. *Journal of Business Finance and Accounting* 47 (3-4): 438-455.
33. Kothari, S. P., Leone, A. J., Wasley, C. E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics* 39 (1): 163–197.
34. Krishnamurthy, S., Zhou, J., Zhou, N. (2006). Auditor Reputation, Auditor Independence, and the Stock-Market Impact of Andersen's Indictment on Its Client Firms. *Contemporary Accounting Research* 23 (2): 465–490.
35. Krishnan, J., Krishnan, J. (1997). Litigation risk and auditor resignations. *Accounting Review*, pp.539-560.
36. Lawson B P, Martin G S, Muriel L, Wilkins M S (2019) How Do Auditors Respond to FCPA Risk? *Current Issues in Auditing* 38 (4): 177–200.
37. Leuz, C., Nanda, D., Wysocki, P. D. (2003). Earnings management and investor protection: an international comparison. *Journal of Financial Economics* 69 (3): 505–527.
38. Lyon, J. D., Maher, M. W. (2005). The Importance of Business Risk in Setting Audit Fees: Evidence from Cases of Client Misconduct. *Journal of Accounting Research* 43 (1): 133–151.
39. Mauro, P. (1995). Corruption and Growth. *The Quarterly Journal of Economics* 110 (3): 681–712.
40. McNichols, M. F. (2002). Discussion of the Quality of Accruals and Earnings: The Role of Accrual Estimation Errors *The Accounting Review* 77 (s-1): 61–69.
41. Minutti-Meza, M. (2014). Issues in Examining the Effect of Auditor Litigation on Audit Fees. *Journal of Accounting Research* 52 (2): 341–356.
42. Olken, B. A., Barron, P. (2009). The Simple Economics of Extortion: Evidence from Trucking in Aceh. *Journal of Political Economy* 117 (3): 417–452.
43. Pacini, C., Swingen, J. A., Swingen, H. X. (2002). The role of the OECD and EU conventions in combating bribery of foreign public officials. *Journal of Business Ethics* 37 (4): 385–405.
44. Power, M. (2013). The apparatus of fraud risk. *Accounting, Organizations and Society* 38 (6–7): 525–543.
45. Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics* 42 (3): 335–370.
46. Sanseverino, A. (2021). The Impact of Anti-Corruption Laws: Evidence from the U.K. Bribery Act's Extraterritorial Reach. *SSRN Journal*. Available at SSRN: <https://ssrn.com/abstract=3913208> or <http://dx.doi.org/10.2139/ssrn.3913208>
47. Seetharaman, A, Gul, F. A., Lynn, S. G. (2002). Litigation risk and audit fees: evidence from UK firms cross-listed on US markets. *Journal of Accounting and Economics* 33 (1): 91–115.
48. Sequeira, S., Djankov, S. (2014). Corruption and firm behavior: Evidence from African ports. *Journal of International Economics* 94 (2): 277–294.
49. Shleifer, A., Vishny, R. W. (1993). Corruption. *The Quarterly Journal of Economics* 108 (3): 599–617.

50. Shu, S. Z. (2000). Auditor resignations: Clientele effects and legal liability. *Journal of Accounting and Economics*, 29(2), pp.173-205.
51. Simunic, D. A. (1980). The Pricing of Audit Services: Theory and Evidence. *Journal of Accounting Research* 18 (1): 161.
52. Skinner, D. J., Srinivasan, S. (2012). Audit Quality and Auditor Reputation: Evidence from Japan. *The Accounting Review* 87 (5): 1737–1765.
53. Venkataraman, R., Weber, J. P., Willenborg, M. (2008). Litigation Risk, Audit Quality, and Audit Fees: Evidence from Initial Public Offerings. *The Accounting Review* 83 (5): 1315–1345.
54. Wu, X. (2009). Determinants of Bribery in Asian Firms: Evidence from the World Business Environment Survey. *Journal of Business Ethics* 87 (1): 75–88.
55. Xu, H., Dao, M., Petkevich, A. (2019). Political Corruption and Auditor Behavior: Evidence from US Firms. *European Accounting Review* 28 (3): 513–540.
56. Zeume, S. (2017). Bribes and Firm Value. *The Review of Financial Studies* 30 (5): 1457–1489.
57. Zhao, Y., Bedard, J. C., Hoitash, R. (2017). SOX 404, Auditor Effort, and the Prevention of Financial Report Misstatements. *Auditing: A Journal of Practice and Theory* 36 (4): 151–177.

## **Appendix A: Definitions of Variables**

### **Dependent Variables:**

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**Log (Audit Fees):** The natural logarithm of audit fees. Data source: Thompson Reuters Worldscope

**ABS(DA) DD:** The absolute value of discretionary accruals calculated using the Dechow and Dichev (2002) model further modified by McNichols (2002) and Francis et al. (2005). Data source: Osiris

**ABS(DA) Jones.** The absolute value of discretionary accruals calculated using the modified Jones model (1991), as modified by Kothari et al. (2005). Data source: Osiris

**Abnormal OPEX.** Actual operating expenses minus normal operating expenses following Dechow et al. (1998), as further modified by Roychowdhury (2006). Data source: Osiris

**Auditor Change:** Dummy variable that takes the value of one if the client changes the auditor in the specific year, and zero otherwise.

**Change to Big 4:** Dummy variable that takes the value of one if the client changes to a Big 4 auditor, and zero otherwise.

**Continue Big 4:** Dummy variable that takes the value of one if the client continues contracting a Big 4 auditor, and zero otherwise.

### **Exposure Measures:**

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**Main measure CPI:** Measure of exposure using the Corruption Perception Index following Zeume (2017) and as indicated in the paper. Data source: Orbis, Osiris, Transparency International (TI)

**BPI:** Measure of exposure using the Bribery Perception Index calculated as the main exposure measure but substituting the CPI with the BPI and as indicated in the paper. Data source: Orbis, Osiris, Transparency International (TI)

**WGI:** Measure of exposure using the World Governance Indicators calculated as the main exposure measure but substituting the CPI with the WGI and as indicated in the paper. Data source: Orbis, Osiris, World Bank

**GDP:** Dummy variable showing the financial crisis effect based on the percentage change in GDP per capita per country from 2008 to 2009. It takes the value of one if the GDP change is higher than the sample median, and zero otherwise. Calculated as:  $GDP_i = \sum_{c=1}^N (1 - \Delta GDP_c) \frac{\#Subsidiaries_{i,c}}{\#Subsidiaries_i}$  where  $\Delta GDP_c$  is the percentage change in GDP of country c from 2008 to 2009.  $\#Subsidiaries_{i,c}$  is the number of subsidiaries incorporated in country c and owned by firm i in 2008 and  $\#Subsidiaries_i$  is the total number of subsidiaries owned by firm i in year 2008. Data source: Orbis, Osiris, World Bank

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**Subject:** Dummy variable that takes the value of one if the company is either UK-incorporated or has at least one UK subsidiary prior to the UK Bribery Act, 2010, (i.e., in 2007) and continues having the subsidiaries up until 2013, and zero otherwise. Data source: Orbis, Osiris

**Post:** Dummy variable that takes the value of one if the firm-year observation is in 2010, 2011 or 2012, and zero otherwise. Data source: Osiris

#### **Firms Controls:**

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**Leverage:** Total debt divided by total equity. Data source: Osiris

**Loss:** Dummy variable that takes the value of one if the company has a net loss in the year, and zero otherwise. Data source: Osiris

**Asset Growth:** The year change of total assets. Data source: Osiris

**ROA:** Net profit divided by total assets. Data source: Osiris

**Size:** The natural logarithm of total assets. Data source: Osiris

**Tenure:** The difference between the date an auditor was appointed by the company and the date the auditor was dismissed. Data source: Osiris

**BIG4:** Dummy variable that takes the value of one if the company is audited by a Big-4 auditing company in a particular year, and zero otherwise. Data source: Osiris

**BM:** Book value of equity divided by the market value of equity. Data source: Osiris

**Inventory Receivables:** Accounts receivables plus inventory divided by total assets. This variable is used only in the regressions where the Log (Audit Fees) is the dependent variable. Data source: Osiris

**Quick:** Total current assets minus inventory, divided by total current liabilities. This variable is used only in the regressions where the Log (Audit Fees) is the dependent variable. Data source: Osiris

**ROI:** Earnings Before Interest and Taxes divided by previous year's total assets. This variable is used only in the regressions where the Log (Audit Fees) is the dependent variable. Data source: Osiris

**CFO:** Cash Flow from operations divide by the previous year's total assets. This variable is used only in the regressions where the Abnormal OPEX and accrual measures are the dependent variable. Data source: Osiris

**Revenue Growth:** The year change of total revenues. This variable is used only in the regressions where the Abnormal OPEX and accrual measures are the dependent variable. Data source: Osiris

## **Appendix B: Examples of Some Cases Prosecuted Under the UK Bribery Act, 2010**

**Airbus:** In January 2020, the giant manufacturer of airplanes is fined a record £820 million for UK Bribery Act charges after admitting to bribing agents across 20 countries to achieve high-value contracts. The penalties account for almost 60% of its average net income in the last three years prior to the sanction. The bribe took place outside the UK (specifically in Asia), but the company was prosecuted under section 7 of the UK Bribery Act, which constitutes an offence if organizations fail to prevent bribery.

**Skansen Interiors Ltd:** In March 2018, Skansen Interiors was found guilty of violating section 7 of the UK BA. Skansen Interiors Ltd self-reported bribery made by two of its employees. The company argued that it had all anti-corruption procedures in place, but the court ruled that such had not been the case. The former managing director was sentenced to 12 months' imprisonment and prohibited from exercising his profession for six years. The person who received the bribe was imprisoned for 20 months and paid an additional £10,697 in penalties.

**Rolls-Royce:** On January 17, 2017, Rolls-Royce was found guilty under the UK Bribery Act 2010, section 17(1) violation. The company was penalized with the highest enforcement action for criminal conduct in the UK. In total, it was fined £497 million and ordered to pay Serious Fraud Office (SFO) costs of 13 million to settle charges with the UK BA accounting for almost 50% of its average net loss in the years 2015-2017.

**Sweett Group:** On February 19, 2016, Sweet Group failed to comply with section 7 of the UK BA. The costs of the prosecution reached £1.4m plus £800,000 in confiscation plus £95,000 in costs. The penalties account for around 9% of its average net income for 2015 and 2014.

### **Appendix C: Main differences between the UK BA and the US FCPA<sup>29</sup>**

- The FCPA prohibits the payment of bribes to foreign public officials, whereas the UK BA makes the act of bribing foreign public officials or any other businessperson an offence.
- The FCPA considers the offering of a bribe a liability whereas the UK BA prohibits not only the offer, but also the acceptance of bribing. The FCPA considers a US company, or a company acting within the US, liable if it fails to maintain “books and records” and “internal control” provisions. The UK BA constitutes a strict corporate liability if an organization, whether incorporated in the UK or not, has not implemented all the necessary anti-bribery procedures to prevent bribery from taking place.
- A special form of facilitation payments is allowed under the FCPA but not under the UK BA.
- FCPA penalties: up to \$250,000 (\$2 million for entities) and five years of imprisonment. UK BA: unlimited fines for both entities and individuals and up to ten years of imprisonment.
- FCPA: bribery is prosecuted if committed with the intention of obtaining or retaining business, whereas the UK BA considers any act of bribery an offence, regardless of the intention.
- Under the FCPA (i), all US companies, US citizens, any foreign company that files with the SEC or has any transaction going through the US banking system, are liable whilst acting inside or outside the US. Under the UK BA, all UK entities, UK citizens as well as any non-UK company that is associated with the UK are liable.<sup>30</sup>

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<sup>29</sup> Detailed information on the differences between the two legislations can be found at the following links of the FCPA compliance report and of the Ministry of Justice in the UK: <http://fcpacompliancereport.com/2011/03/what-are-the-differences-in-the-fcpa-and-bribery-act/>, <http://www.justice.gov.uk/downloads/legislation/bribery-act-2010-guidance.pdf>.

<sup>30</sup> Airbus, (Netherlands registrant with headquarters in France) was found guilty under the UK Bribery Act in January 2020. The company admitted offering bribes across 20 different countries (all outside the UK) but still the judge indicated that the entity was liable for prosecution due to the existence of two UK subsidiaries. The judgment made no reference either to the bribery being associated to the UK subsidiaries or to the turnover of the Group derived by the UK subsidiaries. This is a strong example of the extraterritorial reach of section 7 of the UK BA.



Figure. 1: Difference in trends in Audit Fees Pre- and Post-Regulation for high and low exposed (subject and non-subject) groups

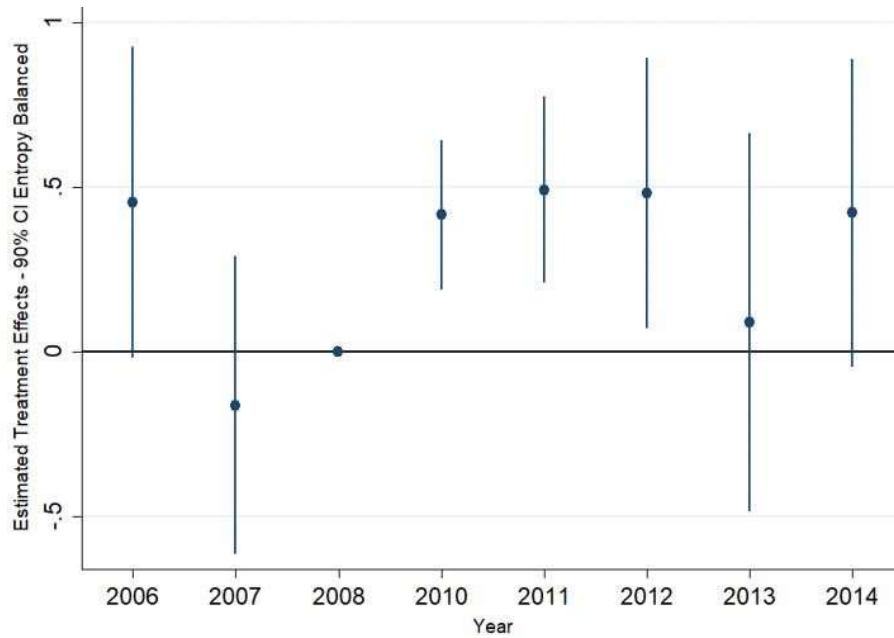


Figure 1 plots the differences in audit fees of the high corruption exposure firms subject versus non-subject group as compared to the low corruption exposure firms subject versus non-subject group in the pre- and post-UK BA period at the 90% confidence interval. We estimate Audit fees as the natural logarithm of audit fees. Subject (Non-subject) firms are indicated by one (zero). We set the year prior to the enforcement of the UK BA (2008) as the base year, after deleting 2009 because it is considered highly uncertain. The event year is set to be 2010 and we run regression (6).

Figure 2: Sample Matching after Propensity Score Matching

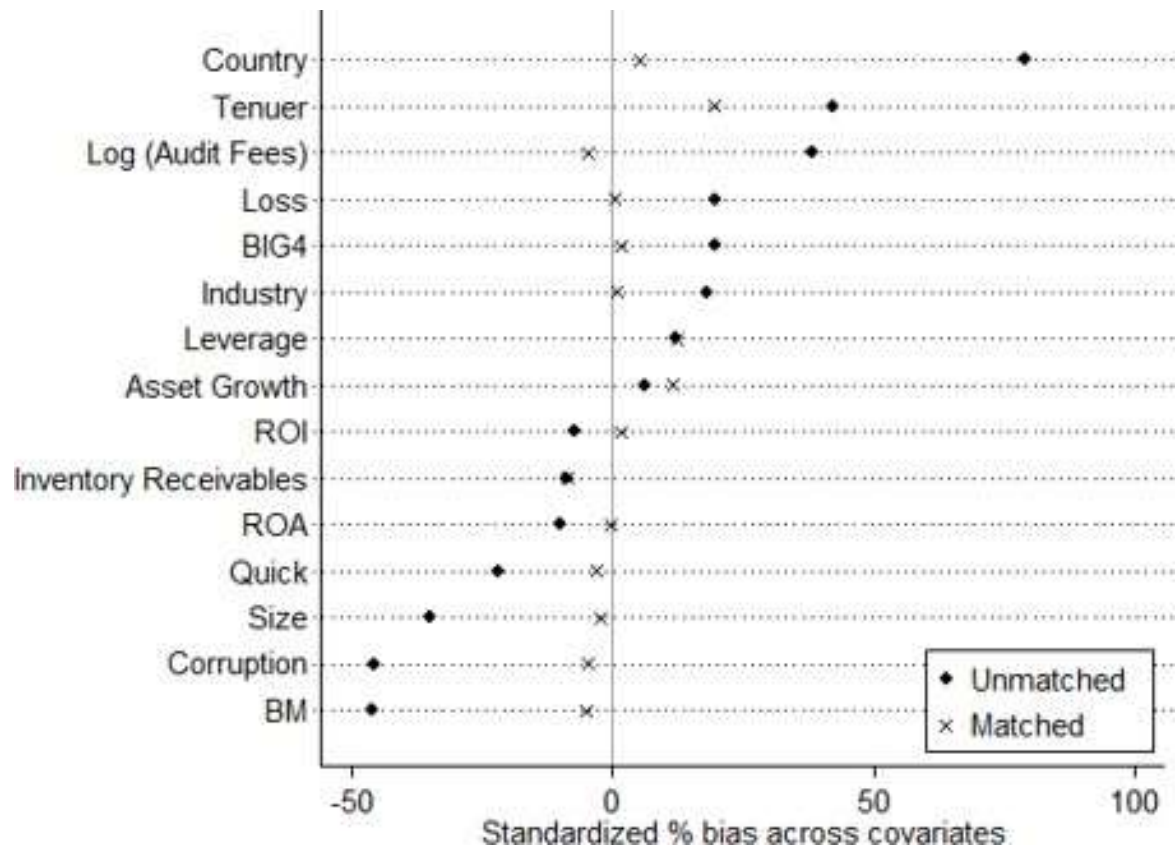


Figure 2 displays the effectiveness of propensity score matching in the two-year pre-BA period (2006-2008) based on all the firm control variables that could relate to audit fees and audit fees themselves. Audit fees is calculated as the natural logarithm of audit fees. We match based on all the control variables as well the country and industry in which the firm operates. We match on no replacement, and we require each observation of the firms affected by the Act (subject) to be matched to the closest neighbor among the firms not affected by the Act (non-subject). The standardized bias between subject and non-subject groups is close to zero achieving a similarity between the two groups before the passage of the UK BA in 2010.

Figure 3: Placebo Estimates of the DiDiD

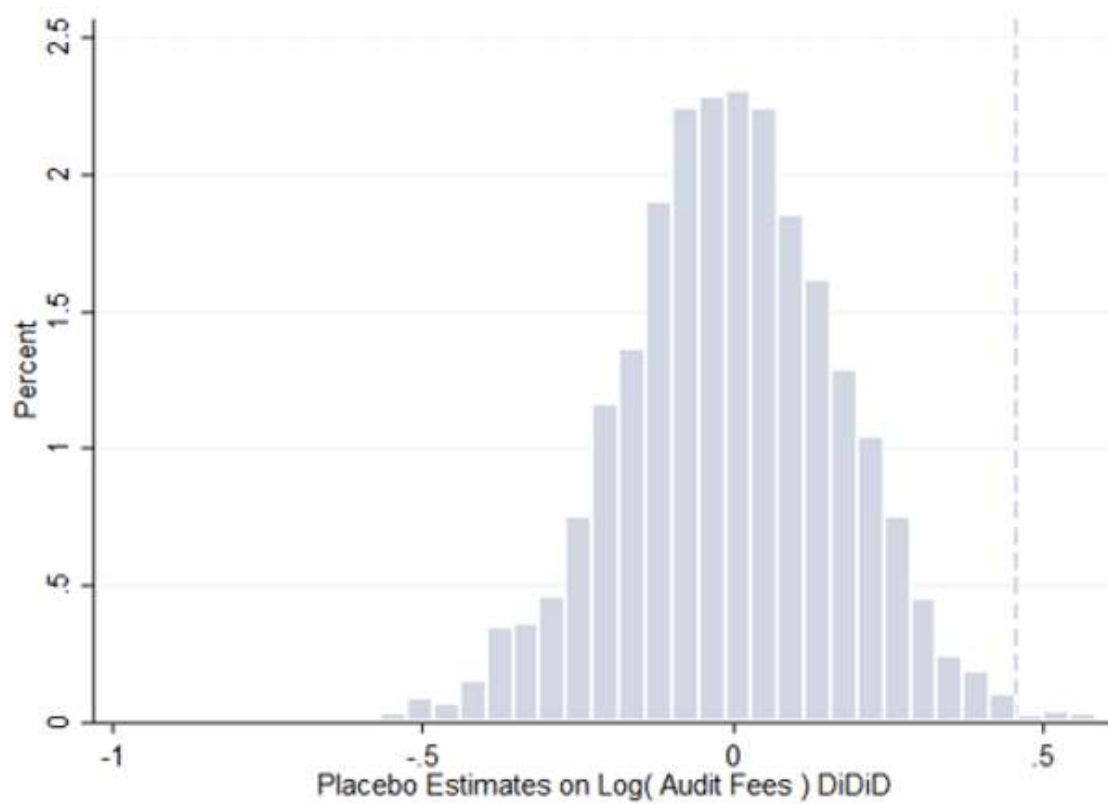


Figure 3 displays histograms on coefficients of the placebo regressions of the triple difference (Subject X Post X Exposed) variable. The coefficients are derived after estimating regression (2) 3000 times assigning the law to different firms and years. The histogram displays the placebo estimates on the triple difference coefficient. The dashed line indicates the coefficient of Subject X Post X Exposed (0.455) variable obtained before performing any matching (untabulated). This is the actual coefficient obtained from the real UK BA event before applying any matching method and not the one obtained randomly.

Table 1: Summary Statistics

**Panel A:**

	<b>Obs</b>	<b>mean</b>	<b>sd</b>	<b>min</b>	<b>e(p25)</b>	<b>e(p50)</b>	<b>e(p75)</b>	<b>max</b>
Exposed	7822	0.508	0.500	0.000	0.000	1.000	1.000	1.000
Audit Fees (\$ millions)	7435	3.741	8.733	0.015	0.252	0.700	2.800	55.100
Log(Audit fees)	7431	13.623	1.760	9.659	12437	13.461	14.845	17.837
Abnormal OPEX	3113	-0.016	0.171	-494	0.103	-0.025	0.054	0.646
Abs(DA)-Modified	3113	0.040	0.039	0.000	0.013	0.028	0.054	0.198
Abs(DA)-DD	3113	0.049	0.049	0.001	0.015	0.034	0.067	0.240
Inventory Receivables	6772	0.295	0.169	0.008	0.166	0.283	0.403	0.756
BIG4	5263	0.524	0.499	0.000	0.000	1.000	1.000	1.000
Leverage	4950	0.616	0.809	0.000	0.113	0.387	0.767	5.039
CFO	6051	0.074	0.096	-328	0.034	0.074	0.117	0.359
ATURN	7709	1.028	0.652	0.043	0.598	0.917	1.312	3.540
Loss	7780	0.150	0.357	0.000	0.000	0.000	0.000	1.000
ROA	7779	0.038	0.102	-564	0.015	0.043	0.079	0.271
Asset Growth	7712	0.117	0.291	-374	0.012	0.055	0.153	1.776
Revenue Growth	7618	0.122	0.297	-555	0.007	0.075	0.181	1.715
Tenure	7780	3.846	3.558	0.000	1000	3.000	6.000	13.000
BM	6746	28.016	50.996	0.000	0.457	1.284	36.664	247.119
Size	7780	14.991	3.025	8.566	12.653	14.812	17.248	21.937
CATA	7780	0.492	0.209	0.045	0.341	0.495	0.641	0.944
Quick	6997	1.468	1.124	0.275	0.832	1.135	1.685	7.347
ROI	7712	0.078	0.114	-0.422	0.032	0.072	0.128	0.427

**Panel B:**

	<b>Subject</b>			<b>Non-Subject</b>			<b>T-test</b>
	<b>Obs</b>	<b>mean</b>	<b>sd</b>	<b>Obs</b>	<b>mean</b>	<b>sd</b>	
Exposed	1027	0.327	0.469	2834	0.538	0.499	-0.2111***
Audit Fees (\$ millions)	979	5.204	10.700	2571	3.229	8.193	1.975***
Log(Audit fees)	979	13.967	1.788	2569	13.316	1.834	0.651***
Abnormal OPEX	298	-0.022	0.177	819	-0.017	0.180	-0.004
Abs(DA)-Modified	298	0.038	0.036	819	0.041	0.038	-0.003
Abs(DA)-DD	298	0.042	0.041	819	0.053	0.052	-0.011***
Inventory Receivables	836	0.294	0.162	2531	0.308	0.175	-0.013**

BIG4	700	0.593	0.492	1432	0.506	0.500	0.087***
Leverage	488	0.713	0.869	1973	0.606	0.831	0.107**
CFO	884	0.082	0.115	2057	0.072	0.096	0.011**
ATURN	1008	1.097	0.671	2815	1.037	0.659	0.060**
Loss	1027	0.180	0.384	2834	0.124	0.329	0.056***
ROA	1026	0.035	0.129	2834	0.045	0.097	-0.010**
Asset Growth	1011	0.169	0.354	2798	0.156	0.340	0.014
Revenue Growth	985	0.158	0.296	2771	0.163	0.327	-0.005
Tenure	1027	4.959	4.270	2834	3.441	3.183	1.518***
BM	752	12.577	30.231	2249	29.329	45.887	-16.752***
Size	1027	14.080	3.398	2834	15.186	2.876	-1.106***
CATA	1027	0.486	0.208	2834	0.503	0.211	-0.018**
Quick	870	1.266	0.953	2599	1.503	1.167	-0.237***
ROI	1011	0.081	0.143	2798	0.090	0.114	-0.009*

This table provides summary statistics for all the variables used in this analysis. Appendix A provides detailed information on the variables used and how they were constructed. Panel A shows the summary statistics of the whole sample for the years covering the period from 2006-2008 and 2010-2012. Panel B shows the summary statistics for the pre-UK BA period (2006-2008) of the treated and control group. The treated group includes all UK incorporated firms and also all the firms that have a UK subsidiary. The control group includes all other firms (i.e., firms not incorporated in the UK which do not have a UK subsidiary). The t-test indicates whether the difference in means between the treated and control group is significant in the pre-BA period for each of the observable characteristics. One asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 2: Pearson (Spearman) Correlations left (right) Corner

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1) Exposed	1	<b>0.060</b>	<b>0.061</b>	-0.043	0.026	<b>0.157</b>	-0.026	0.015	<b>0.096</b>	<b>0.094</b>	-0.048	0.002	0.031	0.033	0.006	-0.020	<b>0.097</b>	<b>0.084</b>	<b>-0.065</b>	0.010
(2) Log(Audit fees)	<b>0.138</b>	1	<b>0.070</b>	<b>-0.072</b>	<b>-0.082</b>	<b>-0.202</b>	<b>0.081</b>	<b>0.281</b>	<b>0.189</b>	<b>0.058</b>	-0.017	-0.003	0.002	-0.033	-0.002	<b>-0.136</b>	<b>0.395</b>	<b>-0.286</b>	<b>-0.236</b>	0.013
(3) Abnormal OPEX	<b>0.058</b>	<b>0.051</b>	1	<b>0.061</b>	-0.031	<b>0.059</b>	-0.006	<b>0.165</b>	-0.022	<b>0.166</b>	-0.015	-0.040	<b>0.256</b>	<b>0.683</b>	-0.003	<b>-0.082</b>	0.003	-0.056	<b>-0.203</b>	-0.014
(4) Abs(DA)-Modified	<b>-0.042</b>	<b>-0.136</b>	<b>0.111</b>	1	<b>0.126</b>	<b>0.062</b>	<b>-0.057</b>	-0.017	0.027	<b>0.057</b>	<b>0.122</b>	0.041	0.046	0.027	-0.018	<b>-0.078</b>	<b>-0.150</b>	<b>0.098</b>	0.003	0.036
(5) Abs(DA)-DD	0.024	<b>-0.120</b>	<b>0.051</b>	<b>0.231</b>	1	<b>0.161</b>	0.002	<b>-0.078</b>	0.004	<b>0.097</b>	<b>0.064</b>	0.036	0.025	-0.005	-0.019	0.012	<b>-0.174</b>	<b>0.218</b>	0.036	0.021
(6) Inventory Receivables	<b>0.084</b>	<b>-0.159</b>	<b>0.076</b>	<b>0.058</b>	<b>0.195</b>	1	0.023	<b>-0.154</b>	<b>-0.189</b>	<b>0.520</b>	-0.028	-0.009	0.001	<b>0.071</b>	<b>0.116</b>	<b>0.183</b>	-0.041	<b>0.668</b>	<b>-0.077</b>	-0.014
(7) BIG4	<b>-0.029</b>	<b>0.046</b>	0.014	-0.038	-0.004	-0.021	1	0.005	0.023	-0.010	<b>-0.065</b>	0.028	0.012	0.022	<b>0.112</b>	0.012	<b>0.066</b>	-0.011	0.016	<b>0.058</b>
(8) Leverage	<b>-0.069</b>	<b>0.193</b>	0.029	-0.021	<b>-0.076</b>	<b>-0.174</b>	<b>0.050</b>	1	<b>-0.063</b>	<b>-0.077</b>	<b>0.122</b>	<b>-0.249</b>	0.021	0.000	-0.010	<b>-0.203</b>	<b>0.108</b>	<b>-0.375</b>	<b>-0.623</b>	<b>-0.167</b>
(9) CFO	0.011	<b>0.141</b>	<b>-0.052</b>	<b>-0.060</b>	-0.002	<b>-0.136</b>	<b>0.039</b>	<b>-0.049</b>	1	<b>0.109</b>	<b>-0.266</b>	<b>0.512</b>	<b>0.176</b>	<b>0.174</b>	<b>-0.066</b>	<b>-0.174</b>	<b>0.088</b>	<b>-0.135</b>	<b>0.062</b>	<b>0.517</b>
(10) ATURN	-0.011	<b>0.030</b>	<b>0.215</b>	<b>0.043</b>	<b>0.149</b>	<b>0.577</b>	-0.002	<b>-0.109</b>	<b>0.103</b>	1	<b>-0.138</b>	<b>0.115</b>	0.043	<b>0.124</b>	0.047	0.022	<b>0.074</b>	<b>0.400</b>	<b>-0.166</b>	<b>0.130</b>
(11) Loss	<b>-0.059</b>	<b>-0.078</b>	0.021	<b>0.149</b>	<b>0.045</b>	<b>-0.029</b>	-0.003	<b>0.100</b>	<b>-0.353</b>	<b>-0.077</b>	1	<b>-0.571</b>	<b>-0.293</b>	<b>-0.254</b>	0.009	<b>0.057</b>	<b>-0.116</b>	<b>-0.082</b>	<b>-0.108</b>	<b>-0.534</b>
(12) ROA	<b>0.048</b>	<b>0.094</b>	<b>-0.133</b>	<b>-0.071</b>	0.017	0.003	0.003	<b>-0.125</b>	<b>0.570</b>	<b>0.086</b>	<b>-0.641</b>	1	<b>0.379</b>	<b>0.366</b>	-0.027	<b>-0.348</b>	<b>-0.118</b>	<b>0.119</b>	<b>0.208</b>	<b>0.918</b>
(13) Asset Growth	<b>-0.039</b>	<b>-0.070</b>	<b>0.299</b>	<b>0.115</b>	<b>0.137</b>	<b>-0.062</b>	<b>0.024</b>	<b>0.046</b>	<b>0.052</b>	<b>-0.106</b>	<b>-0.081</b>	<b>0.120</b>	1	<b>0.447</b>	-0.022	<b>-0.203</b>	<b>-0.063</b>	<b>0.104</b>	-0.002	<b>0.450</b>
(14) Revenue Growth	<b>-0.027</b>	<b>-0.068</b>	<b>0.653</b>	<b>0.089</b>	<b>0.088</b>	<b>-0.035</b>	0.019	<b>0.038</b>	<b>0.092</b>	<b>-0.033</b>	<b>-0.051</b>	<b>0.069</b>	<b>0.490</b>	1	0.017	<b>-0.220</b>	<b>-0.069</b>	0.052	-0.049	<b>0.416</b>
(15) Tenure	<b>-0.089</b>	<b>0.034</b>	<b>-0.051</b>	-0.010	-0.034	<b>0.045</b>	<b>0.182</b>	<b>0.057</b>	0.009	<b>0.053</b>	0.008	-0.013	0.000	-0.009	1	<b>0.075</b>	<b>0.069</b>	<b>0.058</b>	0.014	-0.027
(16) BM	<b>0.096</b>	<b>-0.131</b>	<b>-0.050</b>	<b>-0.150</b>	-0.001	<b>0.127</b>	-0.019	<b>-0.138</b>	<b>-0.106</b>	-0.015	-0.009	<b>-0.098</b>	<b>-0.112</b>	<b>-0.125</b>	<b>-0.072</b>	1	<b>0.472</b>	<b>0.182</b>	<b>0.243</b>	<b>-0.394</b>
(17) Size	<b>0.255</b>	<b>0.430</b>	0.025	<b>-0.224</b>	<b>-0.145</b>	<b>-0.088</b>	-0.014	<b>0.046</b>	<b>0.067</b>	<b>-0.080</b>	<b>-0.180</b>	<b>0.104</b>	<b>-0.104</b>	<b>-0.103</b>	<b>-0.074</b>	<b>0.564</b>	1	<b>-0.134</b>	<b>-0.075</b>	<b>-0.114</b>
(18) CATA	<b>0.062</b>	<b>-0.207</b>	0.015	<b>0.138</b>	<b>0.258</b>	<b>0.693</b>	-0.026	<b>-0.274</b>	<b>-0.090</b>	<b>0.447</b>	0.007	-0.014	0.012	0.004	<b>0.024</b>	<b>0.128</b>	<b>-0.121</b>	1	<b>0.388</b>	<b>0.107</b>
(19) Quick	<b>-0.026</b>	<b>-0.194</b>	<b>-0.146</b>	0.017	0.005	<b>-0.150</b>	<b>-0.060</b>	<b>-0.278</b>	-0.010	<b>-0.225</b>	-0.010	<b>0.088</b>	<b>0.071</b>	0.017	<b>-0.040</b>	<b>0.077</b>	<b>-0.076</b>	<b>0.282</b>	1	<b>0.155</b>
(20) ROI	<b>0.042</b>	<b>0.086</b>	<b>-0.083</b>	0.015	<b>0.064</b>	0.018	0.005	<b>-0.082</b>	<b>0.644</b>	<b>0.136</b>	<b>-0.578</b>	<b>0.861</b>	<b>0.201</b>	<b>0.174</b>	-0.002	<b>-0.171</b>	<b>0.042</b>	0.005	<b>0.054</b>	1

This table provides the correlation coefficient for all the variables used in this analysis during the two year pre- and two year post-UK BA period. The pre-period includes years 2006-2008 and the post-period includes years 2010-2012. The left corner shows the Pearson correlation matrix whereas the right corner shows the Spearman correlation matrix. Bold correlation coefficients represent two-tailed significance at the 0.05 level. All variables are winsorized at the top and bottom percentiles of the distribution. All variables are as defined in Appendix A.

Table 3: Entropy Balancing: Descriptive Statistics

<b>Panel A: Before Balancing</b>	<b>Subject</b>		<b>Non-Subject</b>	
	mean	variance	mean	variance
Log (Audit Fees)	14.56	2.42	13.45	2.57
Exposed	2.80	0.80	3.28	1.74
Leverage	0.73	0.77	0.54	0.52
Inventory Receivables	0.30	0.02	0.32	0.03
Quick	1.13	0.33	1.41	1.02
ROI	0.10	0.01	0.08	0.01
Loss	0.10	0.06	0.10	0.05
Big 4	0.56	0.24	0.49	0.24
Asset Growth	0.14	0.04	0.11	0.03
ROA	0.05	0.01	0.04	0.00
Size	16.04	10.18	16.61	8.37
Tenure	5.13	18.98	3.66	10.77
BM	20.48	1117.00	46.37	2660.00
Industry	37.95	138.00	37.08	104.60
Country	26.22	108.50	20.58	82.24
<b>Panel B: After Balancing</b>	<b>Subject</b>		<b>Non-Subject</b>	
	mean	variance	mean	variance
Log (Audit Fees)	14.56	2.42	14.56	2.42
Exposed	2.80	0.80	2.80	0.80
Leverage	0.73	0.77	0.73	0.77
Inventory Receivables	0.30	0.02	0.30	0.02
Quick	1.13	0.33	1.13	0.33
ROI	0.10	0.01	0.10	0.01
Loss	0.10	0.06	0.10	0.06
Big 4	0.56	0.24	0.56	0.24
Asset Growth	0.14	0.04	0.14	0.04
ROA	0.05	0.01	0.05	0.01
Size	16.04	10.18	16.04	10.18
Tenure	5.13	18.98	5.13	18.98
BM	20.48	1117.00	20.48	1118.00
Industry	37.95	138.00	37.95	138.00
Country	26.22	108.50	26.22	108.50

Panel A of this table shows the descriptive statistics for both subject and non-subject groups before the entropy balancing procedure. The entropy balancing method balances the covariates that relate to audit fees in our setting. Panel B shows the descriptive statistics for both subject and non-subject groups after entropy balancing, where identical means and variances are achieved for all relevant characteristics relative to the treatment except for the treatment itself. The subject group includes all firms that are incorporated in the UK or have a UK subsidiary. The non-subject group includes all other firms (i.e., firms not incorporated in the UK which do not have a UK subsidiary).

Table 4: Effect of Exposure to Corruption on Audit Fees after Entropy Balancing

Dependent Variable: Log (Audit Fees)	All sample		
	(1)	(2)	(3)
Subject	0.155 (0.425)		
Post	0.356 (0.967)		
Subject X Post	-0.172 (-0.567)	-0.168 (-0.769)	-0.256 (-1.411)
Subject X Post X Exposed	0.455**	0.381**	0.403**
Exposed	-2.166 0.495**	-2.323 -0.047	-2.777 -0.082
Subject X Exposed	-2.207 -0.424 (-1.211)	(-0.416) -0.391*** (-4.212)	(-1.122) -0.391*** (-4.254)
Post Period X Exposed	-0.067 (-0.550)	-0.007 (-0.124)	-0.020 (-0.260)
Leverage	0.193**	0.032	0.035
Inventory Receivables	-2.067 -1.757***	-1.268 -0.406	-1.058 -0.054
Quick	(-5.906) -0.106 (-1.378)	(-0.881) 0.061 (0.961)	(-0.095) 0.077** -2.193
ROI	1.112**	-1.604**	-1.666**
Loss	-2.404 0.465***	(-2.280) 0.078	(-2.100) 0.064
BIG4	-3.933 0.185	(0.815) -0.061	(0.835) -0.122
Asset Growth	-1.168 -0.374* (-1.816)	(-0.738) 0.021 (0.213)	(-0.961) 0.067 (0.590)
ROA	2.053*	0.723	0.841
Size	-1.808 0.252***	-1.286 0.281	-1.370 0.216
Tenure	-3.098 0.027	-1.110 -0.008	(0.803) 0.002
BM	-1.528 -0.019*** (-3.904)	(-1.194) 0.007*** -3.616	(0.194) 0.007*** -3.965
Year FE	N	Y	N
Firm FE	N	Y	Y
Year-Industry FE	N	N	Y
Sum of Coefficients: Treated X Post + Treated X Post X Exposed	0.283	0.213	0.147
F-test	2.05	2.19	4.29**
Observations	1,943	1,902	1,884
Adjusted R-squared	0.424	0.917	0.923

This table shows the effect of the UK Bribery Act on audit fees in the post-BA period, 2010-2012, compared to the pre-BA period, after performing the entropy balancing method. The dependent variable is the logarithm of audit fees paid by the parent company. The first column shows the results for the simple difference-in-difference without taking corruption exposure into consideration. Fixed Effects are as indicated. Clustering of standard errors is at country level. T-statistics are reported in parentheses. One asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.



Table 5: Effect of Exposure to Corruption on Abnormal OPEX after Entropy Balancing

Dependent Variable: Abnormal OPEX	All sample	
	(1)	(2)
Subject X Post	-0.020 (-0.835)	-0.009 (-0.510)
Subject X Post X Exposed	0.025 (0.860)	0.022 -1.048
Controls	Y	Y
Year FE	Y	N
Firm FE	Y	Y
Year-Industry FE	N	Y
Sum of Coeff: Subject X Post + Subject X Post X Exposed	0.005	0.013
F-test	0.79	0.71
Observations	1,795	1,791
Adjusted R-squared	0.666	0.696

This table shows the effect of the UK Bribery Act and corruption exposure in the operating expenses component. The results are calculated after performing entropy balancing. Fixed Effects are as indicated. Clustering of standard errors is at country level. T-statistics are reported in parentheses. One asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 6: Auditor Changes

Dependent Variable:	Auditor Change		Change to Big 4		Continue Big 4	
	(1)	(2)	(3)	(4)	(5)	(6)
Subject X Post	-0.134*	-0.188**	0.054	0.172	0.188**	0.128*
	(-1.739)	(-2.136)	(0.663)	(1.688)	(2.537)	(1.878)
Subject X Post X Exposed	0.290**	0.288*	-0.056	-0.122	-0.178*	-0.177
	(2.077)	(2.026)	(-0.516)	(-0.678)	(-1.866)	(-1.466)
Control	Y	Y	Y	Y	Y	Y
Year FE	Y	N	Y	N	Y	N
Firm FE	Y	Y	Y	Y	Y	Y
Year-Industry FE	N	Y	N	Y	N	Y
Sum of Coefficients: Subject X Post + Subject X Post X Exposed	0,156	0,1	-0,002	0,05	0,01	-0,049
F-test	4,59**	4,76**	0,54	1,27	4,90**	2,93***
Observations	1,288	1,470	505	482	1,380	1,358
Adjusted R-squared	0.036	0.136	0.151	0.184	0.649	0.670

Table 7: Effect of Exposure to Corruption on Audit Fees for Alternative Sample Periods and Alternative Samples

**Panel A:** Alternative sample periods

**Dependent variable: Log (Audit Fees)**

	(1)	(2)
Subject X Post	-0.316* (-1.811)	-0.300 (-1.558)
Subject X Post X Exposed	0.395*** -3.119	0.367** -2.777
Controls	Y	Y
Firm FE	Y	Y
Year-Industry FE	Y	Y
Sample	+/- 4	+/- 5
Sum of Coeff: Subject X Post + Subject X Post X Exposed	0.079	0.067
F-test	5.93**	4.45**
Observations	2,227	2,301
Adjusted R-squared	0.908	0.904

**Panel B:** Alternative samples

**Dependent Variable: Log (Audit Fees)**

	Non-FCPA		Non-US OECD	
	(1)	(2)	(3)	(4)
Subject X Post	-0.187 (-0.873)	-0.212 (-1.104)	-0.177 (-0.776)	-0.207 (-1.012)
Subject X Post X Exposed	0.545** -2.545	0.529** -2.559	0.535** -2.324	0.513** -2.331
Controls	Y	Y	Y	Y
Year FE	Y	N	Y	N
Firm FE	Y	Y	Y	Y
Year-Industry FE	N	Y	N	Y
Sum of Coeff: Subject X Post + Subject X Post X Exposed	0.358	0.317	0.358	0.306
F-test	3.10*	3.69*	2.51	3.03*
Observations	1,66	1,638	1,465	1,443
Adjusted R-squared	0.912	0.916	0.909	0.914

Panel A of this table shows the effect of the UK Bribery Act and corruption exposure on audit fees on alternative sample periods. The dependent variable is the natural logarithm of audit fees paid by the parent company. Columns (1) and (2) show the results of a four-year and a five-year pre-and post-BA period respectively. “Post” in column (1) takes the value of one for the four-year period after the UK BA (2010-2013) and zero otherwise (2005-2008) and in column (2) it takes the value of one for the five-year period after the UK BA (2010-2014) and zero otherwise (2004-2008). Panel B shows the effect of the UK Bribery Act and corruption exposure on audit fees on alternative samples. Columns (1)-(2) show the results of the non-FCPA sample and columns (3)-(4) the analysis for the non-US OECD sample. Fixed Effects are as indicated. Clustering of standard errors is at country level. T-statistics are reported in parentheses. One asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 8: Alternative measurement of Exposure to Corruption – Bribe Payers Index (BPI) and World Governance Indicators (WGI) & Effect of the financial crisis.

**Panel A:** BPI and WGI as alternative measurements to corruption

Dependent variable: Log (Audit Fees)	BPI		WGI	
	(1)	(2)	(3)	(4)
Subject X Post	-0.270 (-1.196)	-0.356* (-2.051)	-0.175 (-0.783)	-0.238 (-1.547)
Subject X Post X Exposed	0.603** -2.708	0.594*** -3.772	0.379* -1.825	0.462*** -3.756
Controls	Y	Y	Y	Y
Year FE	Y	N	Y	N
Firm FE	Y	Y	Y	Y
Year-Industry FE	N	Y	N	Y
Sum of Coefficients	0.333	0.229	0.204	0.224
F-test	3.96*	8.63***	1.71	7.04**
Observations	1,938	1,92	1,947	1,932
Adjusted R-squared	0.927	0.932	0.947	0.951

**Panel B:** The effect of the financial crisis

Dependent variable: Log (Audit Fees)	GDP- Financial Crisis	
	(1)	(2)
Subject X Post	-0.011 (-0.069)	-0.026 (-0.344)
Subject X Post X Exposed	0.264 -1.212	0.180 -1.078
Controls	Y	Y
Year FE	Y	N
Firm FE	Y	Y
Year-Industry FE	N	Y
Sum of Coeff: Subject X Post + Subject X Post X Exposed	0.253	0.15
F-test	0.51	1.00
Observations	2,275	2,257
Adjusted R-squared	0.943	0.948

Panel A of the table shows the effect of the UK Bribery Act and corruption exposure on audit fees in the post-BA period, 2010-2012, compared to the pre-BA period, 2006-2008, using the BPI and the WGI as alternative measures for capturing corruption. The results are after applying entropy matching. The dependent variable is the logarithm of audit fees paid by the parent company. “Exposed” is calculated as our main measure of exposure to corruption using the BPI in columns (1)-(2) and the WGI in columns (3)-(4) instead of the CPI. Panel B of the table shows the effect of the financial crisis on the results. “GDP” is the measure of the impact of the financial crisis, calculated as shown in equation (6). It is an indicator variable that takes the value of one if the GDP change per capita of a particular country from 2008 to 2009 is above or equal to the median and zero otherwise. Fixed Effects are as indicated. Clustering of standard errors is at country level. T-statistics are reported in parentheses. One asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 9: Effects of Exposure to Corruption on Audit Fees after Propensity Score Matching

<b>Panel A: PSM</b>		<b>PSM</b>	
<b>Dependent Variable: Log (Audit Fees)</b>			
		(1)	(2)
Subject X Post		-0.194 (-0.881)	-0.178 (-0.920)
Subject X Post X Exposed		0.462* (1.751)	0.442** (2.167)
Controls		Y	Y
Year FE		Y	N
Firm FE		Y	Y
Year-Industry FE		N	Y
Sum of Coeff: Subject X Post + Subject X Post X Exposed		0.268	0.264
F-test		2.00	2.73
Observations		855	847
Adjusted R-squared		0.925	0.929

**Panel B:** Identifying potential changes in compliance and monitoring efforts.

<b>Dependent variable:</b>	<b>Log(Audit fees)</b>		<b>ABS(DA) DD</b>	<b>ABS(DA) Jones</b>	<b>Aggregate Measure</b>
	(1)	(2)	(3)	(4)	(5)
Subject X Post	-0.371 (-1.604)	0.260 (0.957)	0.004 (0.650)	-0.007 (-1.121)	-5.625 (-0.474)
Subject X Post X Exposed	0.379*	0.929***	-0.005	0.011	-18.411
Control	-1.869	-3.794	(-0.588)	-1.344	(-1.411)
Firm FE	Y	Y	Y	Y	Y
Year-Industry FE	Y	Y	Y	Y	N
Sample	High #	Low #	-	-	-
Sum of Coeff:	0.008	1.189	-0.001	0.004	-24.036
F-test	3.07*	7.73	0.4	1.7	0.3
Observations	1,103	764	1,045	1,045	4,491
Adjusted R-squared	0.913	0.952	0.273	0.419	0.684

Panel A of the table shows the effect of the UK Bribery Act on audit pricing in the post-BA period, 2010-2012, compared to the pre- BA period, 2006-2008, after performing propensity score matching. We match on no replacement and each treated observation is matched to the closest neighbor control observation. Panel B shows the effect of the UK Bribery Act and corruption exposure on audit fees according to firm complexity and on earnings quality measures. The results are after applying entropy matching. Columns (1) and (2) of the table show the effect on audit fees after splitting the sample between firms that have a high- or low- number of subsidiaries. “High” means that the firms in this sample have a number of subsidiaries that is above the sample median and “Low” means that the firms in this sample have a number of subsidiaries that is below or equal to the sample median. Fixed Effects are as indicated. Clustering of standard errors is at country level. T-statistics are reported in parentheses. One asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.