

# **Assorted Papers on Auditing and Corruption**

by

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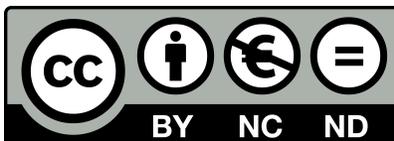
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# Contents

<b>Acknowledgments</b>	<b>1</b>
<b>Published and Submitted Content</b>	<b>4</b>
<b>Abstract</b>	<b>6</b>
<b>Introduction</b>	<b>7</b>
<b>1 Bribes and Audit Fees</b>	<b>12</b>
1.1 Introduction . . . . .	12
1.2 The Institutional Setting and Development of Hypotheses . . . . .	17
1.2.1 The UK Bribery Act, 2010 . . . . .	18
1.2.2 Client’s business risk: Increase in litigation risk and compliance costs after the UK Bribery Act 2010 . . . . .	19
1.2.3 Auditor’s risk: Expected impact of the UK BA on the auditors . . . . .	22
1.2.4 Testable hypothesis on the impact of the UK BA on audit fees . . . . .	25
1.3 Research Design . . . . .	29
1.3.1 Identification strategy . . . . .	29
1.3.2 Data and empirical model . . . . .	31
1.4 Results . . . . .	38
1.4.1 Summary statistics and correlations . . . . .	38
1.4.2 The effect of the UK Bribery Act on audit fees . . . . .	41
1.4.3 Measuring monitoring efforts and compliance efforts . . . . .	44
1.5 Robustness Checks . . . . .	46

1.6	Conclusion . . . . .	53
<b>2</b>	<b>Distracted Auditors: Evidence from Lawsuits against Audit Clients</b>	<b>82</b>
2.1	Introduction . . . . .	82
2.2	Literature Review and Hypotheses Development . . . . .	87
2.2.1	SEC enforcement actions: Procedure and auditor’s responsibility: . . . . .	87
2.2.2	Audit Office and Audit Quality . . . . .	89
2.2.3	Workload and the Impact on Audit Quality . . . . .	90
2.2.4	Hypothesis Development . . . . .	91
2.3	Sample Selection and Research Design . . . . .	92
2.4	Results . . . . .	95
2.4.1	Summary Statistics and Correlations . . . . .	95
2.4.2	The effect of distraction event on Restatements . . . . .	96
2.5	Robustness Checks . . . . .	97
2.5.1	Audit Fees paid by the clients . . . . .	97
2.5.2	Willingness (or ability) of gaining new clients . . . . .	98
2.5.3	Entropy balancing method . . . . .	98
2.5.4	Capacity Constraint effect . . . . .	98
2.5.5	Alternative measurement of audit quality . . . . .	99
2.5.6	Discretionary Accruals . . . . .	99
2.5.7	Internal Control Weaknesses . . . . .	99
2.5.8	Sued firms and attention paid . . . . .	100
2.6	Conclusion . . . . .	100
<b>3</b>	<b>Audit Office’ Benefits of Auditing a Reputable Client</b>	<b>119</b>
3.1	Introduction . . . . .	119
3.2	Prior Literature and Hypotheses Development . . . . .	122
3.2.1	Prior Research on Audit Reputation . . . . .	122
3.3	Prior Literature and Hypotheses Development . . . . .	123

3.3.1	Prior Research on Audit Reputation . . . . .	123
3.3.2	Negotiating power . . . . .	125
3.3.3	Hypotheses Development . . . . .	126
3.4	Research Design . . . . .	129
3.4.1	Sample Selection . . . . .	129
3.4.2	Measurement of Firm Prestige . . . . .	129
3.4.3	Empirical Model . . . . .	130
3.4.4	Summary Statistics and Correlations . . . . .	132
3.5	Results . . . . .	133
3.5.1	Tests of H1: Audit-client firm entering the 100 Most Admired Companies' list and expected client gains in year t+2. . . . .	133
3.5.2	Tests of H2: Audit-client firm entering the 100 Most Admired Companies' list and audit fees charged to other client firms in the following period. . . . .	134
3.6	Robustness Checks . . . . .	135
3.6.1	Propensity Score Matching . . . . .	135
3.6.2	Audit-office level measurements . . . . .	135
3.6.3	Better quality auditors . . . . .	136
3.6.4	Capacity constraint effect? . . . . .	137
3.6.5	Multiple Offices . . . . .	137
3.6.6	Probability of prestigious firms switching auditors . . . . .	138
3.6.7	Longer term effect of reputation shock . . . . .	138
3.6.8	Gaining same-industry clients . . . . .	139
3.7	Conclusion . . . . .	139
<b>4</b>	<b>Effects of the Dark Triad Personality on the Relation between Audit Rotation and Audit Honesty</b>	<b>155</b>
4.1	Introduction . . . . .	155
4.2	Literature Review and Development of Hypotheses . . . . .	159

4.3	Experimental Setting . . . . .	165
4.3.1	Design and Procedure . . . . .	165
4.4	Results . . . . .	169
4.4.1	Manipulation Checks . . . . .	169
4.4.2	Effect of rotation on audit quality . . . . .	170
4.5	Conclusion . . . . .	176
<b>Appendices</b>		<b>196</b>
<b>A Online Appendix Chapter 1:</b>		<b>198</b>
IA1	Data Collection and Processing . . . . .	199
IA2	Sample Composition . . . . .	203
IA3	Supplementary Tests for the effect of the UK BA . . . . .	204
IA4	Validity of difference-in-difference-in-difference . . . . .	206



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# Published and Submitted Content

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(<https://indem.uc3m.es/en/workshop/d/33/xv-international-accounting-research-symposium>)
- September 2019 36th Annual Conference, European Law and Economics Association. Tel Aviv, Israel.  
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- December 2019 Spanish Economics Association. Alicante, Spain.  
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- May. 2018 5th Annual IE Doctoral Consortium, IE Business School. Madrid, Spain.  
(<https://doctoralconsortium.ie.edu/>)
- January 2019 XXIV Raymond Konopka. Coimbra, Portugal.  
(<http://www.konopka2019.com>)
- May 2019 European Accounting Association. Paphos, Cyprus.  
(<http://www.eaa2019.eaacongress.org/r/home>)
- August 2019 American Accounting Association. Chicago, USA.  
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# Abstract

This Doctoral Thesis is formed by four studies focusing on auditing – integrating both audit quality and audit pricing- and bribes, as a form of corruption. In the first chapter, we study how the pricing of audit changes with the level of corruption-exposure at the firms’ business environment. Particularly, we study whether audit fees incorporate the risk of auditing a client that is very likely to be involved in bribe-related activities. In Chapter 2 we investigate the importance of auditors’ time and it could be a determinant of audit quality. In Chapter 3 we study how an audit office’s perceived reputation can impact its ability to gain more clients and its subsequent bargaining power. In chapter 4, we examine the effects of rotation and reputation risk on auditor’s honesty after taking into account the personality traits of each individual in a laboratory experiment.

# Introduction

Audit is of tremendous importance for the sound functioning of the professional world as it protects the veracity of the financial statements. It provides the shareholders with the credibility that the accounts are correctly prepared showing the true and fair view. Auditors, are exposed to engagement risk defined as “the loss or injury from litigation, adverse publicity, or other events arising in connection with the audited financial statements” (Statements of Auditing Standards 106). This encloses the consideration of contracting with a specific client-firm up until the moment they deliver their audit opinion. This engagement risk consists of the entity’s business risk associated with the survival and profitability of the firm, the auditor’s audit risk which is the risk of failing to provide a correct audit opinion, and the auditor’s business risk relating to reputation and litigation losses arising from the client’s relationship. According to the academic literature, when auditors face higher than average risk, they need to take some actions that will counter it leading to a change in audit fees.<sup>1</sup> They might either exert higher effort in order to reduce the probability of not identifying any material misstatement or charge a risk premium to cover themselves from any future reputation or litigation costs (Lawson et al. 2019; Lyon and Maher 2005; Jha, Kulchania, and Smith 2021; Venkataraman, J. P. Weber, and Willenborg 2008). Under any case scenario, audit companies charge higher audit fees to their clients when they perceived them as riskier.

Following this line of research, in Chapter 1 (co-authored with María Gutiérrez Urtiaga and Susana Gago Rodriguez), “**Bribes and Audit Fees**”, we test whether any bribe-relating activities are reflected in audit fees. We anticipate that clients that are very likely to be involved in bribe relating activities should pay higher audit fees as they are perceived as “risky clients”.

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<sup>1</sup>Audit Fees are modeled as the summation of audit effort and a risk premium charged (Simunic 1980)

When client-firms pay bribes, they might conceal them into the accounts through sophisticated schemes. For example, they might fail to record transactions or deliberately misrepresent the information presented to the auditors (Cuervo-Cazurra 2008). This directly makes the detection of bribe-relating activities by the auditors, very difficult. Thus, auditors might believe that the information they have is correct and persuasive enough whereas in fact, this might be wrong. This increases the probability of failing to identify material misstatements which makes auditors exert additional effort and do additional testing to diminish any probabilities of audit failure. At the same time, auditors' reputation risk (and potentially litigation risk) increases when they audit a bribe-payer client (Lawson et al. 2019; Lyon and Maher 2005). To test empirically this idea, we use an exogenous shock that could affect the risk of bribery, namely the UK Bribery Act 2010 (UK BA). The Act takes an extraterritorial reach as it affects UK firms and all other non-UK firms that have a UK subsidiary. Our evidence suggests that the firms that operate in high-perceived corrupt environments and are liable under the Act suffer an increase in audit fees after the UK BA enforcement as compared to firms that fall under the jurisdiction of the Act but operate in low-perceived corrupt environments. Furthermore, the firms that operate in low-corrupt environments experience no change in audit fees as compared to the firms that are not liable under the Act but operate in similar environments. Further tests suggest that the increase in audit fees is mainly attributed to an increase in the auditor's perceived reputation risk (and perhaps litigation risk).

Auditors reputation is directly related to the quality they deliver to their clients. In the vast academic research, audit quality is defined as "the market-assessed joint probability that a given authority will both detect a breach in the client's accounting system, and report the breach" (e.g. DeAngelo 1981). This means that auditors should not only be competent but also independent. Audit quality has received considerable attention from the Securities Exchange Commission (SEC, 2010) and from the accounting bodies (American Institute of Certified Public Accounts (AICPA) / Canadian Institute of Chartered Accountants (CICA, 1999) stating that it is the cornerstone of the audit profession corroborating the truthfulness of the information presented to the public. Based on J. R. Francis, Stokes, and Anderson 1999, it is the city-level

audit offices the ones responsible for contracting with the client, delivering the audited financial statements as well as providing their audit opinion, and not the national audit offices. As noted by wallman1996future, a former SEC commissioner, the academic audit research should focus more on audit-office level research rather than audit-national level studies.

In a similar vein, in Chapter 2 (co-authored with Antonio B. Vazquez), **“Distracted Auditors: Evidence from Lawsuits against Audit Clients”**, we investigate the value relevance of auditors’ time on their subsequent audit engagements. Based on previous auditing literature, during busy seasons, auditors tend deliver lower quality of audits to their clients. In addition, clients of the same audit office tend to receive similar audit quality yielding to a contagion effect (J. R. Francis and Michas 2013). However, this literature treats busyness as a short-term effect on auditors’ quality of audits. It also assumes that all clients are observe drop in audit quality if the auditor is busy. However, it seems unlikely that a busy audit office will allocate equal number of resources and time to their different clients. We study this idea by exploiting non-accounting class action suits against audit-client firms as a plausibly exogenous shock that causes an increase in the auditors’ workload, leaving everything else constant. Because auditors’ time and resources are limited, at least for the short run, auditors would need to shift resources and time away from their other clients and towards the one that is sued. We posit that the audit offices that have a client that receives a non-accounting class action suit to be now distracted (i.e. face workload imbalance). We only take into consideration clients of a distracted audit office and we separate them into the ones that have their offices in a different city as the auditor’s office city (treated group) and the ones whose offices are located in the same city (control group). We believe that a client who is less reachable, is more probable to be ignored by an already distracted auditor who faces some constraints. Our results suggest that the treated group of firms experience more restatement announcements after the distraction event as compared to the control group of firms. Further, the control group does not experience any drop in the audit quality indicating that auditors’ time is valuable and can be a determinant of audit quality. Lack of time is also costly for different-city clients.

Continuing with audit offices, in Chapter 3 (co-authored with Irina Gazizova and Akram Khalilov),

**“Audit Office’s Benefits of Auditing a Reputable Client”**, we test the impact of a positive routine reputation shock on clients’ switching decisions and changes in the bargaining power between audit offices and their clientele. Previous literature suggests that a negative reputation shock relating to the auditor causes clients to switch audit offices and has negative implications on the perceived market audit quality. Our study, is the first to test how a positive reputation shock at the audit office level, can affect the ability of the audit offices to gain a new client and the subsequent audit fees the other clients of the, now, reputable audit office pay. We posit that an audit office whose existing client enters the 100 Americas’ Most Admired Companies List (MAC), and continues contracting with the same audit office, offers to that office a positive reputation shock. Our results indicate that prestigious audit offices (being the ones whose client enters the 100 MAC) are more likely to gain a new client two years after they become prestigious. They also have higher bargaining power and thus charge higher audit fees to their other existing clients in the year following the entrance of a client in the 100 MAC list.

In Chapter 4 (co-authored with Susana Gago Rodriguez), **“The Interactive Effect of the Dark Triad Personality and Rotation risk on Auditor’s Honesty”**, we examine the effects of rotation on auditor’s honesty after taking into account the personality traits of each individual. In this paper, we consider honesty as a determinant of audit quality. In a laboratory experiment, we ask participants to impersonate the role of an auditor and report their audit opinion in a setting in which a client is involved in an earnings misstatement. We expect participants that experience higher levels of Dark Triad (DT) personality (i.e. psychopathy, Machiavellianism, narcissism) to face a discipline effect under a high rotation regime. This is because, individuals with higher level of DT are careerist and seek social and professional status. If there is low probability of rotating to a different firm, these individuals will be willing to satisfy their clients’ needs undermining independence. However, under a high probability of rotation, auditors need to find new prospective clients and thus reputation is very important for them. There is no stimulus to follow their clients’ interests, as they have to search for new clients. Lying causes reputation to diminish and thus their potential career outcomes diminishes as well. Hence, under a high rotation regime they will be more inclined to say the truth. Our results

show that participants with high dark triad traits (psychology, Machiavellianism and Narcissism) issue a more honest audit opinion relative to the other low dark triad (LDT thereafter) participants when the perceived risk of rotation is high.

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# Chapter 1

## Bribes and Audit Fees

### 1.1 Introduction

Bribery is a major form of corruption and represents not only an ethical concern but also an important economic problem for external auditors if they fail in its detection.<sup>1</sup> In this study we test whether bribe-related activities are reflected in audit fees using a quasi-experimental design.

An external auditor's audit and business risk increases when the client firms pay bribes to obtain public contracts because auditors need to exert higher effort when auditing these clients. In case of detection, the auditor of the corrupt firm is very likely to suffer a loss of reputation irrespective of the final verdict and may potentially be involved in the litigation process. This occurs even if there is not an audit failure (AICPA 1993).<sup>2</sup> Specifically, after Rolls-Royce admitted to bribery, the company's auditors were criticized for not revealing it as this "gets to the heart of what an auditor is supposed to do."<sup>3</sup> Further, auditors faced litigation in 404 of the 596 cases that were brought to court under the US Foreign Corrupt Practices Act (FCPA) during the

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<sup>1</sup>Transparency International defines corruption as the "abuse of entrusted power for private gain". In this study, we focus on a specific form of corruption, namely bribes, (i.e. payments in cash or in kind made by firms' employees or intermediaries to foreign public officials or to any other private businessperson to obtain a business contract) and throughout the paper we will use corruption and bribery as synonyms. Corruption may take various other forms such as fraud, extortion, nepotism or cronyism. These, however, are beyond the scope of this paper.

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

<sup>3</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>

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2001–2019 period (Audit Analytics).<sup>4</sup> Moreover, although the amount of bribes a client firm pays may seem immaterial in accounting terms, legal and reputational penalties for client firms and losses for their shareholders when bribery is discovered are likely to be very material.

Because of the high costs it imposes on the economy, in recent decades there has been a surge of research in the economics of corruption<sup>5</sup> and, more specifically, there is a great deal of interest in estimating the extent of bribery at the firm level. In particular, the World Bank (2014) estimates that 20% of firms anticipate that they may have to offer bribes in order to achieve a construction permit, and 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. Moreover, even though corruption is usually associated with developing countries, the World Bank (2014) estimates that bribes in the international business transactions of OECD countries account for about 5 to 25% of the total value of the contract. Additionally, 73% of European citizens believe that bribery and connections is the easiest way to get quick access to public services (EU Anti-Corruption Report, 2014). But, because bribery is an illegal activity, almost all data estimating the extent of these practices at the firm level are indirect, and empirical researchers have usually relied on country-level estimates.<sup>6</sup> This is also a problem for those researchers concerned with the role that auditors and accountants should play in preventing bribery (Cooper, Dacin, and Palmer 2013). Therefore, empirical studies on the impact of bribery in the accounting and auditing literature have been but few, and have mainly focused on country-level evidence on global corruption figures (Gago-Rodriguez, Márquez-Illescas, and Núñez-Nickel 2020).

Our paper contributes to the auditing literature by measuring the extent to which bribery practices at the firm level are reflected in the audit fees. In particular, we test the hypothesis that, because auditors are expected to act as anti-bribery gatekeepers at the firm level, firms expected to pay more bribes will also pay higher audit fees. Interestingly, these higher audit fees may be reflecting different effects. On the one hand, they may reflect an increase in client and audi-

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<sup>4</sup>The US Foreign Corrupt Practices Act, enacted in 1977 prohibits US citizens and entities from bribing foreign government officials to benefit their business interests and it is applicable worldwide.

<sup>5</sup>It has been shown that corruption increases income inequality and decreases growth and investment (Burguet, Ganuza, and Garcia Montalvo 2016; Mauro 1995; P. H. Mo 2001)

<sup>6</sup>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.

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tors' business risk and thus auditors may demand an insurance premium to cover any future losses arising from higher expected litigation and/or reputational costs for the auditor; on the other hand, they may reflect higher compliance costs and monitoring efforts to defend themselves against future losses (e.g., Bell, Landsman, and Shackelford 2001; Lyon and Maher 2005). Moreover, clients might pay higher fees to the auditors in exchange for turning a "blind eye." Given the severe endogeneity challenges that we face in testing this idea, our identification strategy follows Zeume 2017.<sup>7</sup> Specifically, we use the passage of the UK Bribery Act (BA) 2010 as a quasi-natural experiment in the form of an exogenous shock to the costs of bribery.<sup>8</sup> Interestingly, the act has an extraterritorial reach, applying not only to UK firms but also to overseas firms with a UK subsidiary. The UK BA prohibits bribing a national or foreign business person or public official and creates a strict liability offence if businesses fail to prevent bribery. This implies that, depending on the nature of the organization's bribery risk, adequate procedures should be implemented to prevent and detect bribes at the firm level. The top executives and the board of directors of the firms must make sure that the anti-bribery plans and procedures required by the UK BA are developed, implemented, and periodically revalued. The involvement of the external auditor in the design and evaluation of these plans is likely to be important because they are in a better position than internal auditors to evaluate the quality of the plans relative to industry peers. Moreover, external auditors can assist client firms in conducting due diligence on third-party business partners that may request bribes from the client or pay bribes on behalf of the client to other parties when acting as intermediaries, all of which is required by the 2010 Act.<sup>9</sup> Therefore, external auditors are expected to play an important role in the effective enforcement of the regulation.

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<sup>7</sup>Zeume 2017 conducts an event study finding a negative market reaction to the passage of the UK Bribery Act 2010 and showing that affected firms operating in high corruption environments experienced significant market price drops, which indicates that the new law represented an important exogenous shock to the costs of doing business in corrupt environments.

<sup>8</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 the Malaysian, SriLankan 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.

<sup>9</sup>See the Ministry of Justice guideline of procedures for compliance with the UK BA: "UK Bribery Act, 2010 guidance". Available at: <http://www.justice.gov.uk/downloads/legislation/bribery-act-2010-guidance.pdf>

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Ex-ante, though, the effect of the UK BA on both UK and non-UK client firms is unclear. On the one hand, if the UK BA constitutes a serious enforcement threat for bribing, but bribery continues to occur, the costs of doing business, especially when there is a higher probability of violating the Act, will rise. This is because bribes are usually paid to obtain new business or to maintain an existing one (SEC and DOJ 2012). Hence, if a company is operating in a corrupt environment, where bribery is a common practice for ensuring contracts, the cost of stopping bribes would be too high even compared to the increased litigation risk. In this scenario, we would expect auditors to suffer higher business risk and charge higher audit fees. On the other hand, if the law is effective enough to reduce the occurrence of bribes, we expect a decrease in the client's bribery activities and an increase in the compliance costs, with the total effect on the audit fees to be determined based on the extent of this increase (decrease). As a third possibility, if the UK BA is weakly enforced, then we expect no change either in bribery or in compliance costs and consequently no change in the audit fees. Given the nature of these three countervailing effects, the significance and the sign of the UK BA's effect on audit fees remains an empirical question. Moreover, it could be further argued that external auditors are not affected by the litigation, reputation or compliance costs for the client firm, which would be consistent with not finding any effect on audit fees, whatever the impact on client firms.

For our identification strategy, we measure the change in audit fees before and after the passage of the law both for firms affected by the Act (our treated group) and for firms beyond the reach of the new regulation (our control group). We proceed to further separate our treated and control groups based on the perceived exposure to corruption and bribery in the firm's business environment - which depends on the location of its subsidiaries - using the Corruption Perceptions Index of Transparency International. Our main identification strategy follows an entropy balancing method.

The main result from this triple difference identification strategy is that firms that are subject to the UK BA and operate in high corruption-exposure environments suffer an increase in their audit fees. In economic terms the effect amounts to a 10% increase in the audit fees of high corruption-exposure firms affected by the UK BA compared to the high corruption exposure

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unaffected firms. Additionally, we do not find any statistically significant change in the audit fees of the firms that are subject to the act and operate in low corruption environments. This suggests that the law did not alter the operations of these firms and that additional compliance costs due to the setting up of anti-bribery plans were low for these firms. Moreover, for the firms which are subject to the act and operate in high corruption-exposure environments, we try to disentangle the differential impact of higher reputational costs from the impact of higher audit effort and compliance costs. This leads us to two additional important results for firms operating in corrupt environments. First, the increase in audit fees is not the result of changes in the financial reporting quality of these firms (proxied by discretionary accruals and abnormal operating expenses) and, second, the increase is not due to higher compliance costs for companies that have a larger number of subsidiaries in corrupt countries. All these results are consistent with the increase in audit fees for firms operating in high corruption environments corresponding mainly to higher perceived reputational costs for the auditors, rather than to significant increases in the compliance costs or monitoring efforts.

Our paper contributes directly to the literature on the impact of bribery on audit fees. In particular, recent studies have found that US firms operating in countries with higher levels of political corruption (Jha, Kulchania, and Smith 2021; Xu, Dao, and Petkevich 2019) or higher country-level corruption (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 U.S FCPA enactment; and Lawson et al. 2019 find that audit fees are higher for FCPA violators. Nevertheless, 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 these studies show a positive correlation between bribery and audit fees, they are unable to solve these endogeneity issues that may be biasing the results.<sup>10</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. Our contribution relative to these previous studies is that our iden-

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<sup>10</sup>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.

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tification strategy allows us to argue a causal relationship between audit fees and audit-client business risk stemming from illegal activities. Moreover, given the extraterritorial reach of the UK Bribery Act, our results have a strong international validity.

We also contribute to the more general literature on corruption in two respects. Because of the difficulty in observing the illegal activities of firms, empirical results on corruption have mainly focused on either cross-country macro evidence, direct field studies, lab experiments, questionnaires, and the use of audit data on public expenditures. As Burguet, Ganuza, and Garcia Montalvo 2016 discuss, each of these measures has problems of its own. Cross-country macro evidence in Mauro 1995 fails to establish clear causality.<sup>11</sup> Direct field studies, such as Olken and Barron 2009, and lab experiments, like Abbink, Irlenbusch, and Renner 2002, do not have endogeneity problems, but usually lack external validity (Armantier and Boly 2011). Questionnaires, such as D'Souza and Kaufmann 2013, have been widely used to provide bribery estimates, but suffer from an under-reporting problem.

The rest of the paper proceeds as follows. In the next section, we discuss the main differences between the UK BA and previous anti-bribery legislations 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 the audit pricing and in financial reporting quality after the law. In Section 4 we discuss the main results of the difference-in-differences and triple-difference approach. Robustness checks are presented in Section 5. Finally, in Section 6 we conclude.

## **1.2 The Institutional Setting and Development of Hypotheses**

In this section, we explain the main characteristics of the UK Bribery Act and explain how the act affected not only the business risk of the affected client firms but also their auditors' audit

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<sup>11</sup>Popular measures that we use in this paper are the Corruption Perceptions Index, the Bribe Payers Index (both from Transparency International) and the Worldwide Governance Indicators (WGI) of the World Bank, covering 215 countries (Kaufmann, Kraay, and Mastruzzi 2011).

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and business risk. Client business risk is associated with the survival and profitability of the company whereas audit business risk refers to the potential increase in audit costs and the reputation and litigation losses an auditor might suffer from the client's engagement even if there is no audit failure. The auditor's audit risk is associated with the auditor failing to identify material misstatements and thus providing an incorrect audit opinion (AICPA 1993).

We develop our testable hypothesis based on the expected impact of the act on client firms and their auditors.

### **1.2.1 The UK Bribery Act, 2010**

Fighting corruption has been a main concern for many nations, with most applying anti-corruption laws to discourage fraudulent activities (World Bank, 2018).<sup>12</sup> However, companies that are subject to anti-bribery regulations seem to object to it, arguing that these regulations place them in an unfavorable position compared to their unregulated competitors. This builds on the opinion that bribery is a necessary cost of doing business (Zeume 2017). In an attempt to address the issue, in 2010 the UK parliament established the UK Bribery Act as the main governing body for prosecuting bribery. The Bribery Act (hereafter, UK BA), 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 the prosecution can be applied to any UK-associated person; 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 (e.g., the Airbus prosecution case). Its main purpose was to combat bribery at a time when bribery rates were constantly rising, repealing all the anti-bribery laws that previously applied in the

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<sup>12</sup><https://www.worldbank.org/en/topic/governance/brief/anti-corruption>.

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UK up to that point. The enforcement agencies responsible for investigating and prosecuting the cases under the UK Bribery Act are the Serious Fraud Office for the UK and the Director of Public Prosecutions for extraterritorial prosecutions through mutual legal assistance with other countries.

## **1.2.2 Client's business risk: Increase in litigation risk and compliance costs after the UK Bribery Act 2010**

For UK firms and firms with a UK subsidiary the passage of the Act should imply an increase in both litigation risk related to bribery and in compliance costs.

### **1.2.2.1 Litigation Risk**

The BA causes an upward shift in the litigation risk for the affected firms. Specifically, for a given level of bribery, we can define litigation risk as a function of the probability of detection times the expected sanctions. As we will discuss, both, the probability of detection and the expected sanctions are anticipated to be higher for the affected firms after the passage of the BA Act.

The probability of detection, in the post-UK BA period, for the affected firms, will be higher than before. Non-UK firms with a UK subsidiary are now subject to an additional anti-bribery law, and can be prosecuted by UK authorities, irrespective of any previous regulation operating in their countries of incorporation.<sup>13</sup> Regarding UK firms, even though prior anti-bribery laws

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<sup>13</sup>Of course, the increase in litigation risk, especially for firms not incorporated in the UK, will depend on cooperation among countries to facilitate international prosecution. International prosecution can be achieved through the mutual legal assistance between countries. This also helps firms to obtain assistance during the investigation procedures. Foreign law enforcement agencies therefore cooperate with each other to provide anti-corruption enforcement. This was highly encouraged following the OECD Anti-Bribery Convention (1997) according to which, OECD countries are required to cooperate in anti-corruption investigations. In the majority of the FCPA enforcement actions, foreign authorities provide their assistance (HANS B Christensen, Maffett, and Rauter 2020) which

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applied in the UK<sup>14</sup>, these laws 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.<sup>15</sup> This is in sharp contrast to the number and prominence of the 14 cases prosecuted after the passage of the UK BA (detailed information can be found in Appendix 2). Although this number may seem small, it can be put into perspective considering the following. First the US FCPA, regarded as one of the best anti-bribery laws, had only 21 convictions in the first 10 years of its enforcement. Second, the UK BA only applies to cases prosecuted after July 2011. Moreover, the director of the UK Serious Fraud Office (SFO), Lisa Osofsky states that there are 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” (FCPA conference, November 2018).<sup>16</sup> Third, the crime is hard to detect and in most cases is revealed when the bribery is unsuccessful and the bribe recipient goes to the police. It can also be identified through self-reporting (e.g. Skansen Interiors Ltd) or with the help of a whistleblower (e.g. Airbus). The UK BA improves detection of the crime by providing guidance for companies on how to protect whistleblowers. It also encourages the ‘mutual legal assistance scheme’ between countries to enhance prosecution.

Regarding potential sanctions associated with bribery, the UK BA represents a sharp increase in comparison to both previous legislations held in the UK, and legislations in other jurisdictions. Regarding previous UK laws, they applied a maximum fine of £500 and a maximum imprison-

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makes the international prosecution under the UK BA easier. According to the director of the Serious Fraud Office in the UK “The growing collaboration among the international law enforcement community is inspiring... Prosecutors, regulators and law enforcement around the world are working more closely together than we ever have before.”

<sup>14</sup>Prior to the UK BA, 2010, the main anti-corruption laws in the UK were the Public Bodies Corrupt Practices Act 1889 and the Prevention of Corruption Act 1906, as amended by the Prevention of Corruption Act 1916 and the Anti-Terrorism, Crime and Security Act 2001. The most important international anti-corruption laws are the US Foreign Corrupt Practices Act (FCPA) (1977) and the OECD Anti-Bribery Convention (1997).

<sup>15</sup>The OECD working group specified: “The absence of specific case law on the bribery of foreign officials in a common law country makes it difficult to evaluate how effectively the current system works (with regards for instance to the scope of application, relevance and clarity of the terms used, efficiency of sanctions, etc).” OECD, Directorate for Financial and Enterprise Affairs, United Kingdom: Phase 2 – Report on the Application of the Convention on Combating Bribery of Foreign Public Officials in International Business Transactions and the 1997 Recommendation on Combating Bribery in International Business Transactions para. 248 (March 17, 2005), available at: <http://www.oecd.org/dataoecd/62/32/34599062.pdf>

<sup>16</sup>Lisa Osofsky. 2018. 35th International Conference on the Foreign Corrupt Practices Act, Washington DC, <https://www.sfo.gov.uk/2018/12/04/keynote-address-fcpa-conference-washington-dc/>, accessed January 11, 2021.

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ment of two years. In comparison, the UK BA imposes unlimited fines and a maximum of 10 years of imprisonment. Regarding international laws we focus here on the US Foreign Corrupt Practices Act (FCPA) (1977) and the OECD Anti-Bribery Convention (1997).<sup>17</sup> Moreover, since the FCPA is the most comparable law to the UK BA and it is much stricter than the OECD Anti-Bribery Convention (1997), it is sufficient to compare the FCPA with the UK BA to see whether the UK BA caused expected sanctions to increase for non-UK firms. A detailed comparison of both laws, showing the relative severity of the UK BA is provided in Appendix 3. Here, we will only point out that under the FCPA the penalties for bribing are up to \$250,000 and five years of imprisonment (for individuals), and a maximum of \$2 million in fines (for entities). The UK BA imposes unlimited fines for both entities and individuals. Individuals can also face prosecution and up to ten years imprisonment.<sup>18</sup>

In some cases, the court decides to cease prosecution in exchange for a deferred prosecution agreement (DPA), if the prosecuted company meets certain conditions. Under a DPA, the company needs to pay a sum of money (see the Airbus and Rolls-Royce case in Appendix 2). In case a DPA is not granted, companies are prosecuted. This prosecution is very likely to include collateral effects, such as the director's disqualification from acting for two to 15 years, asset confiscation and elimination from public contracts' bids. This might imply huge losses for companies whose main profitable activity comes through public sector contracts. This, inevitably puts at risk many firm stakeholders such as employees (if jobs are lost) and shareholders (through a decline in share prices).

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<sup>17</sup>These two laws were, at the time of the UK BA enforcement, the most important and strictest laws that applied in an international environment. It is also important in our study as 82% of the firms included in our final sample belong to an OECD country.

<sup>18</sup>The severity of the penalties is corroborated by the details of the cases prosecuted by the UK BA that can be found in Appendix 2. The fines imposed in these cases amount to a very large percentage of the average net income of the fined company during the three years prior to the time of the sanction.

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### 1.2.2.2 Compliance costs

The UK BA applies a strict corporate liability criterion if an organization, either incorporated in the UK or with a UK subsidiary, did not implement anti-bribery procedures to prevent the bribery. Under this section, a corporation can defend itself against bribery charges in court if it can prove that it implemented all the adequate procedures and internal compliance controls to combat bribery.

Specifically, the Ministry of Justice issued a detailed guideline of procedures, the “UK Bribery Act, 2010, guidance”.<sup>19</sup> It states that the adequate procedures depend on the risks of bribery and on the nature and complexity of the organization’s activities. Accordingly, firms that operate in riskier environments characterized by a higher probability of bribing, will face greater obligations. Internal audit procedures are crucial for reinforcing the application and effectiveness of the anti-bribery process. Important aspects of these procedures should be bribery risk assessment, due diligence, and checks on third business parties (especially with regard to public procurement), auditing, and approval of hospitality and promotional expenditures and disclosure of bribery-related policies within the organization and to the public. Top management and boards of directors are made responsible for implementing the procedures.

Summing up, all these characteristics of the UK BA are enough to consider that it represents higher compliance and litigation costs for UK and non-UK firms with a UK subsidiary. In fact, the UK BA is generally considered the harshest anti-bribery law internationally.<sup>20</sup>

### 1.2.3 Auditor’s risk: Expected impact of the UK BA on the auditors

So far, we have argued that firms affected by the new legislation face higher litigation risk and compliance costs. But this will only affect the audit fees if these increased risks and costs are

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<sup>19</sup>A complete analysis of the role of internal auditing in the UK Bribery Act published by the Ministry of Justice can be found in the following link: <http://www.justice.gov.uk/downloads/legislation/bribery-act-2010-guidance.pdf>.

<sup>20</sup>Transparency International, ‘The Bribery Act’, available at <http://www.transparency.org.uk/our-work/businessintegrity/bribery-act/>

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also costly for the auditor.

### 1.2.3.1 Auditors' Business Risk

With respect to litigation risk, it seems clear that this increase in litigation risk for the firms that pay bribes constitutes an increase in the business's risk of the client firm that in turn increases the engagement risk of the auditor. Auditors are subject to engagement risk defined as "the loss or injury from litigation, adverse publicity, or other events arising in connection with the audited financial statements" (Statements of Auditing Standards 106).

In particular, even if auditors comply with all anti-bribery procedures and auditing standards, they can still face a lawsuit (Statements of Auditing Standards 107, footnote 2). This is also true, even when auditors provide correct audit opinions (AICPA 1993). Thus, bribe-paying clients expose auditors to shareholder litigation in the case of regulatory intervention (Lyon and 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 and Jieying Zhang 2014).

Moreover, auditors will also bear the direct costs from adverse publicity from a lawsuit even if they are not found guilty.<sup>21</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 the audit quality (Lyon and Maher 2005). Chaney and Philipich 2002 analyze the market reaction in the three days after Arthur Andersen's admission of having shredded important documents. They find that the market penalized the share price of other Andersen clients, showing a negative impact of the loss of reputation of the auditor on its client firms. Arguably, that was an extreme case of reputational loss, but studies by Cahan, Emanuel, and Sun 2009 and Krishnamurthy, J.

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<sup>21</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-relating activities (US House of Representatives, 1976). It can be found in the following link: <https://www.justice.gov/sites/default/files/criminal-fraud/legacy/2010/04/11/houseprt-95-640.pdf>.

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Zhou, and N. Zhou 2006 find that the market also penalizes client firms when the auditor does consulting work for the client, as a signal of loss of independence and declining audit quality. These studies cannot separate reputation and litigation risk. But, Skinner and Srinivasan 2012 and Venkataraman, J. P. Weber, and Willenborg 2008, by focusing on low-litigation jurisdictions, are able to prove that reputation damage is detrimental for the auditor and its clients.

### 1.2.3.2 Auditors' Audit Risk

According to auditing standards, auditors are responsible for identifying any fraudulent activities (Cuervo-Cazurra 2008). External auditors scrutinize the financial statements of their clients and are expected to curtail any fraudulent behavior. 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 make their detection more difficult. These schemes are intended to make the auditor believe that the evidence is persuasive enough and free of material misstatements, which might be wrong (ISA 240). Consequently, the auditors' audit risk increases. Hence, when a company is considered to be riskier in this respect, i.e., there is a higher probability of the client being involved in bribe-related activities, 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. Therefore, we conclude that the UK BA causes an upward shift of audit risk for those auditors whose clients are subject to it.

We have already discussed previously how the compliance obligations are stricter and outnumber the ones applied under other anti-bribery legislations.<sup>22</sup> Neither internal nor external auditors are directly mentioned in the guidance procedures. Nevertheless, to the extent that

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<sup>22</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 US 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).

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this guidance on how to comply with the UK BA adds to previously existing accounting standards, auditors are likely to be actively involved in these procedures. According to Pacini, Swingen, and Rogers 2002, auditors are responsible for complying with the procedures that relate to bribery. They are also responsible for complying with the regulatory framework that affects their client (AU-C 250). Moreover, auditing standards provide the auditors with guidance for identifying alarming factors that may 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."

To sum up, focusing on the impact of the UK BA on auditors we may say that, overall, the new law pressures audit firms into reconstructing their procedures under its ideals of what is good for businesses and reputation (Power 2013). Thus, auditors incur costs to investigate bribery and to implement all this adequate infrastructure aiming at combating it.

#### **1.2.4 Testable hypothesis on the impact of the UK BA on audit fees**

In order to develop our testable hypothesis we follow the rationale of Simunic 1980. He uses the following model to explain how the costs and risk of a period's audit will impact audit fees.

$$E(C) = cq + E(d) \times E(\theta)$$

$E(C)$  equals the 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 bear from a period's audited financial statements and  $E(\theta)$  is the likelihood that the auditor will have to cover for these losses (Seetharaman, Gul, and Lynn 2002).

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In the auditing literature, we can see how bribe-related activities affect audit fees. In particular, Lyon and Maher 2005 show that firms voluntarily disclosing bribe-related activities in a period where there was no litigation risk pay higher audit fees. Lawson et al. 2019 find that firms violating the FCPA pay higher audit fees as compared to non-FCPA violators.

#### 1.2.4.1 Overall impact of the UK BA on audit fees for the affected firms

We have already established that the passage of the UK BA is expected to have increased compliance costs for all firms (which would be reflected in higher values of  $c$  and/or  $q$ ) and, for a given level of bribery, it increased the risk of litigation (higher  $E(\theta)$ ) and the potential penalties associated with bribery (higher  $E(d)$ ). Therefore, one could expect the passage of the UK BA to increase the audit fees for the affected firms.

Nevertheless, it is important to keep in mind that the above hypothesis would only be true if the law imposed a considerable threat to the companies whilst more or less maintaining the same level of bribery within the organization as prior to the introduction of the law. On the contrary, the objective of the UK BA is to curb bribery at the firm level. An effective anti-bribery legislation produces a spike in the costs of bribery, therefore discouraging corruption. The deterrence effect of the Act would cause a decline in potential litigation and reputation risk (lower  $E(d)$   $E(\theta)$ ) as compared to the pre-UK BA period. But effective law enforcement would also imply an increase in compliance costs, which would ultimately increase the first scale of the equation. The net effect of audit fees is unclear as it would depend on the extent of the increase (decline) in compliance costs (expected losses). Another possible hypothesis is that, the UK BA would be weakly enforced and would not cause any significant change in the audit fees.

Due to the fact that the expectations move in different directions, the net effect on audit fees after the UK BA remains an empirical question. We therefore state our first hypothesis in a neutral format.

*HYPOTHESIS 1. Firms affected by the UK BA will not necessarily experience a change in audit*

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*fees.*

#### **1.2.4.2 Impact of the UK BA on audit fees depending on exposure to corruption**

Interestingly, in spite of the extraterritorial nature of the UK BA, one cannot expect the reach of the law to be uniform across countries. Due to the diverse nature of the business environment in the distinct countries, the determinants of bribery are markedly different across firms depending on the countries where they operate. Hence, we expect firms liable under the BA to make decisions that depend not only on UK law and institutions but also, to some extent, on the quality of the institutions of the country where the subject firm is doing business.

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, Márquez-Illescas, and Núñez-Nickel 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 probability of prosecution, implying lower litigation risk. But, it may also happen because "corruption corrupts" and weaker institutions lead to higher expectations of bribes by corrupt officials (Andvig and Moene 1990; Brooks and Dunn 2004). These ideas are confirmed by D'Souza and Kaufmann 2013, showing that strong legal institutions are associated with lower bribery at the firm level. HANS B Christensen, Maffett, and Rauter 2020, show that bribes paid are positively associated with the country's corruption level, as measured by the Corruption Perceptions Index (CPI) compiled by Transparency International. Moreover, according to Gago-Rodríguez, Márquez-Illescas, and Núñez-Nickel 2020 these measures of corruption may have a downward bias because firms operating in weak institutional environments do not only have higher incentives to bribe, but are also more reluctant

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to disclose their actions in firm-level surveys.

Taking all of this into account, we will distinguish between firms that operate in business environments with high versus low exposure to corrupt practices. High-exposure firms are firms that operate in environments perceived as highly corrupt, where firms may be expected to pay bribes to obtain contracts. High exposure firms will be hit harder by the new law. On the one hand, if these firms maintain their bribery activities after the passage of the UK BA they will suffer higher litigation and reputational costs. On the other hand, if they choose to reduce the level of bribery to bring litigation and reputational costs down to their previous level, they will need to develop and implement hard compliance procedures.

Notice that in both cases, for auditors, the costs of engaging with high-exposure firms will be relatively higher after the enactment of the UK BA, either because they are also risking higher reputational and litigation costs or because they face higher monitoring and compliance costs when working for these firms. This leads us to formulate our second testable hypothesis as follows:

*HYPOTHESIS 2. Firms affected by the UK BA and operating in high-exposure environments will experience an (higher) increase in audit fees relative to firms affected by the UK BA and operating in low-exposure environments.*

#### **1.2.4.3 Impact of the UK BA on auditors' compliance and monitoring efforts**

We have just argued that auditors working for high-exposure firms will increase their fees either because of the reputation and litigation costs attached to these firms or because of the monitoring and compliance costs required to reduce bribery in high-exposure environments. Moreover, auditors may react proactively to the Act, and even if the firms do not increase their internal monitoring, auditors may choose to increase their own monitoring efforts independently. The idea here is that, to some extent, the auditor may reduce its reputational and litigation costs arising from the engagement with corrupt firms by providing higher effort to detect and report

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bribery, either because the company asks for this additional effort or because the auditor exerts this higher effort to protect itself from reputational or litigation costs.

Therefore, we want to distinguish to what extent the increase in audit fees is due to an insurance premium because of the higher reputation/litigation risk or because of higher compliance and monitoring efforts. Our hypothesis is that, if the increase in audit fees is mainly due to higher compliance and monitoring efforts we should observe an increase in the audit quality of the affected firms after the passage of the Act.

*HYPOTHESIS 3. If the increase in audit fees is due to an increase in the monitoring efforts of the auditor, the quality of financial reporting will increase.*

## **1.3 Research Design**

### **1.3.1 Identification strategy**

The purpose of our paper is to offer evidence of a causal relationship between firms' likelihood of engagement in bribery and the level of audit fees that these firms have to pay. Our identification strategy is based on measuring the changes in the audit fees that firms have to 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.

First, the shock has to be unanticipated and exogenous. Zeume 2017 offers an extensive discussion showing that it was unanticipated. This is mainly because the media did not cover it up until the day of the draft announcement.<sup>23</sup> Further, the provisions of the Act were also unanticipated. It is also expected to be permanent, as the main purpose of the UK BA is to replace previous obsolete anti-bribery acts. The passage of the Act is also likely to be exogenous with respect to the audit fees firms have to pay. Proponents of the UK BA have suggested that extending the reach of the regulation to non-UK firms was necessary to avoid placing domestic

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<sup>23</sup>Interestingly, contrary to the UK BA, the US FCPA enforcement in 1977 does not offer such an exogenous shock to the costs of corruption. The enforcement of the act was well known and revealed by the SEC's initiative from the voluntary disclosure program. Further, for the first three decades of its enforcement, prosecutions at international environment were very limited (HANS B Christensen, Maffett, and Rauter 2020)

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companies in a competitive disadvantage relative to foreign firms with weak anti-bribery institutions. Thus, there was an immediate need for a more effective anti-bribery legislation that would reduce bribery without placing UK firms at a competitive disadvantage. This implies that audit fees are unlikely to be the reason for the introduction of the new legislation.

The second condition has to do with the covariate balance between the treated and control group prior to the introduction of the UK BA. Our sample may include firms that were different in many observable characteristics prior to the enforcement of the UK BA. To address this concern, we perform our regressions using entropy balancing and run a further robustness test, using propensity score matching, obtaining similar results to the ones obtained using the unmatched sample.

A third condition requires the law to have had a substantial effect on firms. Zeume 2017 identifies that the passage of the Act causes a significant decline in the share price of the companies that were affected by the act. Additionally, Sanseverino 2020 offers evidence that US multinationals rearranged their international operations and closed subsidiaries in highly corrupt countries after the passage of the UK BA.

The last condition that should apply to our exogenous shock is the absence of other confounding effects affecting the results. There were important changes in the UK's generally accepted accounting practice (GAAP) in the year 2012, but it was estimated that 96.7% of UK firms were not affected.<sup>24</sup> Therefore, this should not introduce any material noise to our results. Further, the EU made audit rotation mandatory in 2012. To the extent that this affected all EU firms in our treated and control group, it should not be a problem for our results.<sup>25</sup> Interestingly, the effects of audit rotation on audit independence are still an ongoing debate. Studies that show that audit rotation is positively related with audit quality (Carey and Simnett 2006; Garven, Beck, and Parsons 2018; Y. Zhao, Bedard, and Hoitash 2017) would go against us finding an

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<sup>24</sup>It can be found in the UK governments' page in the following link on page 2: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/192119/uk\\_gaap\\_changes.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/192119/uk_gaap_changes.pdf)

<sup>25</sup>Untabulated analysis, after excluding 2012 (the year of the introduction of the mandatory rotation) shows that the results still hold. Further, the final sample of treated firms, comprises 200 firms that are incorporated in the UK and of 148 firms that are incorporated in other countries but are liable under the UK BA because they have a UK subsidiary.

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increase in the audit fees as a reflection of the litigation/reputation costs. In addition, in the period covering the years 2011 to 2014, there were new regimes relating to firms and auditors. Companies started replacing auditors' work with some new forms of assurance services, including anti-bribery procedures. This again would go against us finding an increase in audit fees after the UK BA.

An important event to consider is the financial crisis of 2008, according to which audit fees in the US went down during 2008 and were then restored to normal levels in 2009. This may have had a negative impact on the audit quality (Ettredge, Elizabeth E Fuerherm, et al. 2017; Chen, Krishnan, and W. Yu 2018). Since the UK BA applies to UK companies and companies with a UK subsidiary, the financial crisis would only confound our results to the extent that the UK and other countries that have a significant number of firms with UK subsidiaries were hit by the crisis in a substantially different way than countries whose firms do not have a significant number of UK subsidiaries. This is very unlikely, but in our robustness tests we run falsification tests to discard this possibility.

### **1.3.2 Data 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 know whether a firm was affected by the UK BA we need data on its subsidiaries.<sup>26</sup> Therefore, we start our data collection procedure by searching for subsidiary information from the Orbis database. We commenced with 18,207 unique listed and major un-listed/delisted industrial companies around the world that had at least one subsidiary in which the parent company had direct owner-

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<sup>26</sup>The UK Bribery Act states that "the offence can be committed in the UK or Overseas and is a strict liability offence even if improper payment has no connection of any kind to the UK" and "failure to prevent bribery in the course of business applies to any overseas entity that carries on a business or part of a business in the United Kingdom." "Part of a business" is understood to refer to a subsidiary. Therefore, for ownership to be established, it must be the case that the company has more than 50% of shares in the subsidiary. This information can be accessed in Transparency International UK with the following link: <https://www.transparency.org.uk/our-work/business-integrity/bribery-act/>

ship above 50% in 2018. After obtaining the incorporation date of the subsidiaries, our sample amounted to 6,363 publicly listed firms that had their subsidiaries incorporated in 2006 or prior to that year.<sup>27</sup> We removed financial and insurance firms from our sample.

In the second step, we collected information on audit fees from Thomson Reuters Worldscope and all other accounting information regarding the consolidated financial statements from the Osiris database. After merging Thomson Reuters Worldscope with Osiris, and after deleting additional missing information on firm-related characteristics, our final sample of firms is reduced to 2,559 firm-year observations.<sup>28</sup> We then use this sample to estimate the following difference-in-differences and triple-difference regression models in equations (1.1) and (1.3.2) respectively:

$$Audit\ fees_{i,t} = \beta_{i,1}Treated \times Post_{i,t} + \beta_{i,2}Controls_{i,t} + \alpha_i + \gamma_{industry,t} + \epsilon_{i,t} \quad (1.1)$$

$$\begin{aligned} Audit\ fees_{i,t} = & \beta_{i,1}Exposure_{i,t} + \beta_{i,2}Treated \times Post_{i,t} + \beta_{i,3}Post \times Exposure_{i,t} \\ & + \beta_{i,4}Treated \times Exposure_{i,t} + \beta_{i,5}Treated \times Post \times Exposure_{i,t} \\ & + \beta_{i,6}Controls_{i,t} + \alpha_i + \gamma_{industry,t} + \epsilon_{i,t} \end{aligned} \quad (1.2)$$

Our main dependent variable, *Audit fees*, is directly taken from the annual firms' reports in Thomson Reuters Worldscope and is measured as the natural logarithmic of audit fees in US dollars for each firm in each year.<sup>29</sup> Among the independent variables, *Post*, is a binary indica-

<sup>27</sup>A limitation of our study is that our Orbis and Osiris database only includes large and very large firms. Hence, the final sample of firms that had subsidiaries comprises only those large or very large firms that had large or very large subsidiaries. Thus, our results may not be generalized to smaller sized firms.

<sup>28</sup>The reason for such a low number of observations is that there are many missing observations on audit fees. Further, we had to merge the information from Thomson Reuters Worldscope with Osiris by name since there is no a common firm identification code. We merged based on name requiring a 97% similarity for the firms from Thomson Reuters to have the respective matched firm in Osiris. We hand crossed the merging and we deleted observations that were not correctly matched.

<sup>29</sup>We use the natural logarithm of audit fees as it provides a convenient (elasticity based) interpretation (Venkataraman, J. P. Weber, and Willenborg 2008). We use exchange rates for each of the years of interest from the World Bank Database to convert all audit fees into United States dollars (USD), since all other firm accounting-

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tor that takes the value one after the passage of the BA and zero before. The UK BA, passed on March 25, 2009, but received its Royal Assent on April 8, 2010.<sup>30</sup> Even though it was initially scheduled that its enforcement would have started in April 2010, eventually, the enforcement of the law started 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 it from our regression analysis and we consider 2010 as our event year.<sup>31</sup> We thus determine a three-year pre-and post-UK BA period considering the years 2006-2008 as our pre-period, and 2010-2012 as our post-period. Hence, our *Post* variable is a dummy that takes the value of one if the firm-year accounting information is in 2010-2012 and zero otherwise.<sup>32</sup> Our *Treated* variable identifies the firms that were affected by the passage of the UK BA, taking the value one if the company is either incorporated in the UK or had a UK subsidiary prior to the passage of the Act, and zero otherwise. A 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>33</sup> To eliminate such concern, our treated sample consists of firms that were incorporated in the UK or had a UK subsidiary both before and after the passage of the UK BA.<sup>34</sup> Thus, our difference-in-differences variable is the interaction between the *Treated* and *Post* variables. In equation (1.1) this interaction shows the average differential change in audit fees from the pre- to the post-UK BA period for firms affected by the act as compared to firms not affected by the Act.

To construct our triple-difference design we introduce the dummy variable *Exposure*, which measures the firm's exposure to corrupt practices in the business environment where it operates, and we then interact this variable with the *Treated* and *Post* variables.

To build this variable we follow Zeume 2017 and estimate the overall exposure of the firm as

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information is directly downloaded in USD.

<sup>30</sup>In a monarchy, for a law to be enacted and enforced, the monarch should approve it first.

<sup>31</sup>In untabulated analysis, we also remove the year 2010 and results remain the same.

<sup>32</sup>We conduct alternative tests considering a four-year and a five-year pre- and post-BA period. Results are shown in section 5.7 and remain the same as the primary analysis. In untabulated analysis, we also drop 2010 from our sample but the results remain the same.

<sup>33</sup>Sanseverino 2020 finds that US multinationals were likely to discontinue operations in high corruption countries after the passage on the UK BA.

<sup>34</sup>This restriction biases our results in that it makes it less likely that we 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.

the sum of all its subsidiaries' exposure to corruption according to the country where each of them operates. Specifically, we use the Corruption Perceptions Index<sup>35</sup> to obtain the corruption level of each country and the Orbis database to derive subsidiary information and compute the exposure measure as following:

$$\text{Exposure}_i = \sum_{c \in C} \left( (10 - CPI_c) \times \frac{\#Subsidiaries_{i,c}}{\#Subsidiaries_i} \right)$$

where  $CPI_c$  is the Corruption Perceptions Index (CPI) of country  $c$  in each of the years that are relevant for our analysis.  $\#Subsidiaries_{i,c}$  is the number of subsidiaries incorporated in country  $c$  and owned by firm  $i$  in the relevant year,  $\#Subsidiaries_i$  is the total number of subsidiaries owned by firm  $i$ . The total exposure of a firm is the summation of all of its exposures coming from all of its subsidiaries.<sup>36</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 *Exposure* variable as an indicator variable that takes the value one if the CPI for the firm is above or equal to the median sample and zero otherwise.<sup>37</sup> It is important to note though, 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. We include *Size* measured as the log of total assets, since larger firms usually pay higher audit fees (Bell, Landsman, and Shackelford 2001). We include *Leverage*, *Quick ratio*, *Losses*, and *ROA* to control for cross-sectional

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<sup>35</sup>The Corruption Perceptions Index, published annually by Transparency International, measures bribery at the country level together with other types of corruption like extortion, cronyism or nepotism. Even though in our study we are only concerned with bribery, different measures of corruption at country level are usually highly correlated. We therefore believe that its inclusion will not cause a material error in our analysis. In section 5.1 we use the World Governance Indicators (WGI) and the Bribe Payers Index (BPI) as additional proxies. Results remain the same.

<sup>36</sup>This measure assumes that each subsidiary is equally important to the firm. An alternative way would have been to take into account the revenues generated by each subsidiary. Untabulated analysis give similar results.

<sup>37</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 easier interpretation, we present our results taking exposure as a zero/one dummy variable relative to the median value of the sample.

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differences in the financial condition of the firm (Seetharaman, Gul, and Lynn 2002). We expect the *Quick ratio* and *ROA* to have a negative impact on audit fees, since low values of these ratios may display problems in the company and thus higher business risk. We also anticipate a positive coefficient for *Leverage* and *Losses* because higher values of these variables indicate problems of financial distress. Higher business risk should also be associated with higher audit fees. We also include *Big4* because the biggest auditing firms are expected to provide better audit quality and to demand a higher fee premium (DeFond and Jieying Zhang 2014). Moreover, we use *Tenure* to account for the fact that the audit quality is lower in the initial years of the firm-auditor match and also to control for the fact that auditors may practice low balling activities in the early years of the match (Huang et al. 2015). Finally, *Inventory receivables* are included to control the complexity of auditing inventories and receivables, and *Book to Market* and *Asset growth* to control for current and future growth prospects (Bronson, Ghosh, and Hogan 2017). Detailed variable definitions and data sources for each of them are presented in Appendix 1.<sup>38</sup> In order to control for time-invariant unobserved heterogeneity at the firm level, we include ( $\alpha_i$ ) firm fixed effects in all of the regressions. We also account for the factors that are common within each industry and year using year-industry fixed effects ( $\gamma_{industry,t}$ ).<sup>39</sup> Finally, in all the regressions in this paper, we cluster the standard errors at country level.

### *Interpretation of the triple difference*

The interpretation of the triple-difference requires some care. The interaction term *Treated*  $\times$  *Post* (from hereafter DiD) ( $\beta_2$ ) from equation (1.3.2) estimates the average differential change in audit fees from the pre- to the post-UK BA period for the treated firms that have low exposure compared to the control firms that also have low exposure. In other words, the coefficient indicates the change in audit fees after the UK BA for firms that have low exposure and are held liable under the UK jurisdiction compared to their counterparts that are not under the UK court supervision. Our main explanatory variable is the triple-difference variable (*Treated*  $\times$

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<sup>38</sup>All continuous variables are winsorized at the 1% and 99% level

<sup>39</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.

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*Post × Exposure*) (hereafter DiDiD). The  $\beta_5$  coefficient estimates the extra effect on audit fees for high-exposure firms, affected vs unaffected, over low-exposure firms, affected vs unaffected, from the pre- to the post-UK BA period. The total treatment effect on audit fees for the affected firms with high exposure relative to the unaffected firms with high exposure is derived after the summation of the  $\beta_2$  and  $\beta_5$  coefficients.

*Identifying potential changes in compliance and monitoring efforts.*

We have argued that a potential increase in audit fees in reaction to the passage of the UK BA may correspond to either an insurance premium for the additional reputational/litigation costs borne by the auditor or to higher compliance and monitoring effort on the part of the auditors. To separate these two different effects, we hypothesize that if there is an increase in the monitoring effort of the auditors, we would expect to observe a higher audit quality that would be reflected in changes in the accounts of the affected firms after the passage of the law. In order to test this hypothesis we repeat our analysis using the abnormal operating expenses component as our dependent variable.

The big challenge in this case is how to 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 and Jieying 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 agents' fees, large payments in cash, bank cashiers' 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, etc. Most of these items would usually be book-recorded as operating expenses, so 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, but anecdotal evidence indicates that bribes are usually hidden in different

disguises in the operating expenses component of the income statement.<sup>40</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 all of this into account, we use “Abnormal operating expenses” to measure bribe-related activity following the Dechow, Kothari, and Watts 1998 model, as modified by Roychowdhury 2006. Specifically, we build our abnormal operating expenses variable running the following regression for every industry and year.<sup>41</sup>

$$\frac{OPEX_{i,t}}{A_{i,t-1}} = \beta_{i,0} + \beta_{i,1} \frac{1}{A_{i,t-1}} + \beta_{i,2} \frac{S_{i,t-1}}{A_{i,t-1}} + \epsilon_{i,t} \quad (1.3)$$

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,  $S_{i,t-1}$  is total sales at the end of the previous period. For every firm-year, the abnormal operating expenses is the actual operating expenses minus the “normal” operating expenses derived from equation (1.3) using the estimated coefficients from this industry-year model, the lagged sales, and lagged assets of the firm.<sup>42</sup>

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<sup>40</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>41</sup>All equations are estimated per industry and year and we require at least 10 observations in a given industry-year group.

<sup>42</sup>Following Roychowdhury 2006, we use lagged sales rather than sales at the end of the current period. This is because, in case managers follow sales-increasing policies, the residuals of equation (1.3) could be low even if operating expenses are not reduced. If sales during the current year increase, then “normal” operating expenses increase, which in turn decreases abnormal operating expenses. But this decrease would not be due to an actual decrease in the operating expenses component but due to the management of sales upwards. To solve this problem, we use the lagged sales component to estimate normal operating expenses.

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## 1.4 Results

### 1.4.1 Summary statistics and correlations

Summary Statistics are presented in Table 1. Panel A shows the summary statistics of the whole 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. 2019).

In panel B, we see the summary statistics of the firms that are under the jurisdiction of UK courts (treated) compared to the group of firms that are not (control) 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, though, are quite different as they differ in most of the variables. For this reason, in our main analysis, we perform entropy balancing. As a robustness check, we also perform propensity score matching to rule out the possibility that our results are driven by these differences.

Table 2 shows the correlations between our main dependent variables and control variables. 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.

#### *Entropy balancing method*

We want to test whether audit fees have increased as a consequence of the passage of the UK BA for those firms that are liable for bribery under UK jurisdiction. We acknowledge a possible bias due to the differences in the covariates of the treated and control groups prior to the shock. To address this issue and eliminate the bias, we perform entropy balancing to create similar treated and control groups prior to the passage of the law (Hainmueller 2012; Quinn 2018). The

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entropy balancing method is closely related to the propensity score matching (PSM) method. The advantage of entropy balancing over PSM is that it designates weights for the control and treatment groups, achieving not only an identical covariate balance before the treatment but also similar higher-order moments of the covariate distribution between the treated and control sample (Quinn 2018). We apply entropy balancing in the years prior to the law enactment, excluding 2009. We thus take the average of the observable characteristics of the years 2006-2008 and we assign weights to the treatment and control groups in such a way so as to achieve perfect equality with regard to the first and second moments (Hainmueller 2012).

To implement the entropy balancing method, we identify a set of observable characteristics that could cause changes in the audit fees. Essentially, these covariates constitute our control variables in the regressions. We also match on industry in an attempt to decrease as much as possible the bias in our results.

Table 3 shows the covariate adjustments of the control variables that affect audit fees before and after the entropy balancing process respectively. Panel A provides descriptive statistics for the pre-adoption period both for the companies that fall under UK jurisdiction and for those that do not. In particular, panel A shows some notable differences in the observable characteristics of these two groups prior to the UK BA adoption. Panel B presents the results and the differences in the observable characteristics between the two groups after performing the entropy balancing method. The matching method is successful because it creates not only identical means between the two groups, but also identical variances. We therefore perform our analysis on the sample created from the entropy balancing method.<sup>43</sup>

### *Testing for identification assumptions*

An important assumption that is made in our identification strategy is that of parallel trends. This implies that, in the absence of the UK BA, the audit fees of treated and control firms should have changed in the same way. The use of firm fixed effects in our analysis enables us to over-

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<sup>43</sup>In the main analysis we present the results after entropy balancing and, in the robustness checks, we present the results after propensity score matching. In Tables IA5 and IA6 of the online Appendix, we show the results from the unmatched sample.

come a potential concern regarding any time-invariant differences across firms affecting our results. However, possible correlated omitted variables that change around the enforcement of the UK BA could affect the treated and control groups differently, biasing our results. In order to tackle the problem, we map out the counterfactual treatment effects over the sample period (Atanasov and Black 2016; Hans B Christensen et al. 2017). If we observe that in the pre-BA period the change in audit fees is the same between the treated and control group, we can assume that the evolution will also be similar in the absence of the event. We use an OLS regression and create interactions between the treated group and one-year period excluding the year 2009. Our benchmark year is a year prior to the enforcement year, which is 2008 (after excluding the contaminated year). Specifically, to assess the validity of the parallel trends assumption, we run the following regression after matching our treated and control group using the entropy balancing method :

$$\begin{aligned}
 \text{Audit fees}_{i,t} = & \beta_{i,1} \text{Treated} \times T_{i,t-3} + \beta_{i,2} \text{Treated} \times T_{i,t-2} + \dots \beta_{i,8} \text{Treated} \times T_{i,t+4} \\
 & + \beta_{i,9} \text{Controls}_{i,t} + \alpha_i + \gamma_{\text{industry},t} + \epsilon_{i,t}
 \end{aligned} \tag{1.4}$$

Figure 1<sup>44</sup> shows the counterfactual treatment effects in the pre- and post- BA period of the double interaction (DiD) between the treated group and year-periods. We observe that prior to the UK BA, there is no statistically significant difference in changes in the audit fees between the treated and control sample. This implies that the parallel trends assumption holds. The passage of the UK BA though, does not cause any change in the audit fees of the treated group relative to the control group. Notice, however, that our main assumption requires a triple-difference depending on the level of exposure and, therefore, this non-significant result can be attributed to firms with high- and low-exposure environments responding differently to the Act. Therefore, to ensure robustness, we need to test whether the parallel trends assumption holds in the case of the triple difference (DiDiD). We therefore estimate the following regression using triple interactions between the treated group, the year dummies and the exposure indicator.

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<sup>44</sup>Figure 1 is presented after applying entropy matching method. However, results in the pre- UK BA period are the same even if entropy balancing is not applied.

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The regression is estimated after applying entropy balancing:

$$\begin{aligned}
Audit\ fees_{i,t} = & \beta_{i,1} Exposure_{i,t} + \beta_{i,2} Treated \times Exposure_{i,t} + \beta_{i,3} Treated \times T_{i,t-3} \\
& + \beta_{i,4} Treated \times T_{i,t-2} + \dots \beta_{i,10} Treated \times T_{i,t+4} + \beta_{i,11} Exposure_{i,t-3} \times T_{i,t-3} \dots \\
& + \beta_{i,18} Exposure_{i,t+4} \times T_{i,t+4} + \beta_{i,19} Treated \times T_{i,t-3} \times Exposure_{i,t-3} \dots \\
& + \beta_{i,26} Treated \times T_{i,t+4} \times Exposure_{i,t+4} + \beta_{i,27} Controls_{i,t} + \alpha_i + \gamma_{industry,t} + \epsilon_{i,t}
\end{aligned} \tag{1.5}$$

Figure 2 shows the counterfactual effects for the triple interaction (DiDiD). The counterfactual effects in the three years prior to the BA are insignificant which indicates that there is no significant difference in audit fee changes between the two groups of firms prior to the BA enforcement. Moreover, any firm-related differences between the high- and low-exposure firms will be eliminated after the inclusion of firm fixed effects in our main regression.

#### 1.4.2 The effect of the UK Bribery Act on audit fees

In order to test Hypothesis 1 and Hypothesis 2, we run regression (1.1). Table 4 shows the results of the effect of the UK BA on audit fees after performing an initial DiD estimation. After controlling for firm characteristics and adding fixed effects, the UK BA does not cause any change in the audit fees of the affected firms compared to the firms that are not liable under the new law. However, we believe that the overall effect of the UK BA on audit fees depends on the level of exposure to corrupt practices in the business environment of the firms, which requires a DiDiD estimation.

Table 5 columns (1) to (3) present the results of this DiDiD analysis from equation (1.3.2) for the whole sample of firms. After accounting for the exposure of each firm, we observe no statistically significant change in audit fees for firms that operate in low-corruption environments. These firms operate in environments where bribery is not a common practice for ensuring new

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business, or even maintaining existing one. They are also more likely to be characterized by a more ethical-oriented culture within the organization with strong mechanisms to combat bribery and corruption and hence do not need to implement many additional compliance procedures.<sup>45</sup> Thus, we conclude that the UK BA causes no significant change in the business risk or compliance costs for these firms relative to other firms not affected by the Act and also operating in low-corruption environments, because none of these firms were likely to engage in bribe-related activities even in the pre-UK BA period.

The results in Table 5 confirm Hypothesis 2 because we observe an important increase in audit fees for the firms that are affected by the Act and operate in high-exposure environments relative to the firms that are not subject to the UK BA and have high exposure. Specifically, there is a 0.7 standard deviation  $[(\exp(-0.168+0.381))/1.760]$  increase or an approximate 9 percentage point  $[(\exp(-0.168+0.381))/13.623]$  increase in the audit fees of high-exposure firms affected by the UK BA compared to the high-exposure unaffected firms. This confirms the idea that “corruption corrupts”. In highly corrupt environments paying bribes maybe a necessary cost of doing business and, therefore, even after the passage of the UK BA the 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, since the cost of bribery goes up with the passage of the UK BA.

We further create two subsamples. The first one excludes US firms and firms cross-listed in a US stock market because these firms were already subject to the FCPA, which, at the time of the enactment of the UK BA was considered the most effective anti-bribery law and had been enforced over many years. These firms may not have been affected by the UK BA, and their inclusion in the sample may be generating noise. We can see in Table 5 that once we eliminate these firms (columns (4) and (5)), our results are maintained. The second subsample

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<sup>45</sup>Jha, Kulchania, and Smith 2021 argue that firms with low-corruption exposure in their business activities are most probably the ones that do not need to bribe to get contracts and, because for these firms any cost of bribery activity are likely to out-weight the benefits, they are more likely to have invested in internal mechanisms to prevent bribery. Unfortunately, we cannot directly test the argument that internal mechanisms were already in place prior to the UK BA because data on internal control weaknesses at the international environment are not available.

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further eliminates all non-OECD and US firms. The reasoning behind this is that, even before the passage of the UK BA, firms incorporated in the OECD were already subject to the OECD Anti-Bribery Convention of 1997. This law was not enforced to the same extent as the UK BA, but at the time of approval of the new Act, firms may have felt that it was not going to be more effective than the OECD Convention. Moreover, to the extent that this pre-existing regulation was effective in curbing bribery we expect to see smaller effects for this subsample. In columns (6) and (7) we keep only OECD firms affected by the law in our treated sample and OECD firms not affected by the law in our control sample. We still find that, when we restrict the sample to OECD firms, results are in line with the argument proposing that the UK BA is a much harder anti-bribery law than the OECD Anti-Bribery Convention.

Comparing the results in Tables 4 and 5 we now conclude that the non-significant change (increase) in the average audit fees for the low (high) exposure firms causes an insignificant *Treated*  $\times$  *Post* coefficient in Table 4. This is because the UK BA affects the low- and high-exposure firms differently, which offsets the overall effect of the UK BA on the audit fees of all firms, regardless of the level of exposure.

One might argue that auditors exercise a fee discount for the initial year and then charge higher audit fees for the firms that operate in high-exposure environments. We believe that it is unlikely to happen only (and especially) in the case of high-corrupt exposed firms as these firms are the riskiest ones for the auditors. Two further reasons, allow us to rule out this alternative explanation. First, looking at the mean auditor's tenure for treated and control firms before the UK BA (Table 1, panel B) we observe that, on average, the auditor's tenure is five years for the treated firms and three years for the control group prior to the enforcement of the Act. Second, we account for this by including the auditor's tenure as a control variable which turns out to be statistically insignificant in all the regressions, indicating that audit fees do not change with the auditor's tenure.

Overall, our evidence so far suggests that the UK BA provoked an increase in audit fees for treated firms that operate in high-exposure environments. Since preventing bribery may be more difficult in these environments, we believe the increase in audit fees for these firms is due

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to an increase in the perceived cost of bribery for the auditors in terms of reputation and/or potential litigation for getting involved with these firms. The auditor charges higher audit fees as a premium for bearing the extra risk. Nevertheless, an alternative explanation for this result would be that the auditor charges higher fees to treated firms operating in high-exposure environments because the higher risk of bribery in these environments implies higher compliance costs.<sup>46</sup> Our next test aims to identify the main force that causes auditors to demand higher audit fees, namely compliance costs or litigation/reputation risk.

### **1.4.3 Measuring monitoring efforts and compliance efforts**

In this section we try to separate the impact of higher reputational and litigation costs from the potentially higher monitoring and compliance costs. We thus test Hypothesis 3.

The main purpose of the UK BA is to combat bribery. If indeed, the Act is followed by higher compliance and monitoring efforts aimed at decreasing bribe-related activities, we should expect to see the real effects from its deterrence in the company's accounts. In Table 6 we use abnormal operating expenses derived from equation (3) as the accounting variable that should be more closely related to bribe payments at the firm level. We observe no change in abnormal operating expenses for firms affected by the UK BA following its enforcement. We believe this is because it is very difficult for auditors to effectively monitor bribery at the firm level for two reasons. First, bribe payments are made "under the table" during a shady transaction and the firm will try to make the payment as opaque as possible. Operating expenses is a broad category that should include most ways of hiding bribes, but bribery could also be hidden by using third parties as intermediaries and reflecting this in the price paid for fixed assets. This makes their detection difficult at the aggregate level through accounting information. Second, especially for large firms, such as the ones we have in our sample, the amount of the bribery

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<sup>46</sup>An alternative explanation for the increase in audit fees would be that these firms are contracting with better quality auditors, following the UK BA, and thus demand higher audit fees. We address this issue in sections 5.5 and 5.6.

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related expenses may be immaterial for the firm, even if the bribes imply large amounts for the corrupt officials that receive them (Transparency International UK).<sup>47</sup> For these two reasons we doubt that the observed increase in audit fees can mainly correspond to an increase in the monitoring effort of the auditors.

But even if bribery leaves no trace in the accounts and is difficult for auditors to monitor, we have to consider the compliance costs required by the Act in the form of additional documents that the firm has to produce, regardless of whether they are really committed to stopping bribery or not. So far, we have seen that audit fees remain unaffected for subject firms operating in low-exposure environments, both for our whole sample and for the subsamples. This suggests that the increase in the compliance costs that had to be borne by the auditor following the passage of the UK BA has not been very high. However, the UK Bribery Act asks for the anti-bribery procedures to be proportionate to the business risk, complexity, and nature of the organization's activities. This implies that auditors working for client firms operating in high-exposure environments would face both higher reputational and litigation costs and higher compliance costs following the passage of the law.

To disentangle the impact on audit fees of the reputational/litigation costs from the impact of compliance costs, we search for a measure that will be directly related to the size of compliance costs irrespective of the corruption exposure of the firm. We hypothesize that, other things equal, more complex firms should face higher compliance costs, and we measure compliance costs by the number of subsidiaries. There are two reasons why this variable can help us to evaluate the differential impact of compliance costs on the overall increase in audit fees. First, the number of subsidiaries a firm has is positively related to the compliance costs. That is, the more subsidiaries a firm has, the more anti-bribery procedures a firm must undertake regardless of the fact that there are economies of scale. Second, for a given level of corruption exposure, the number of subsidiaries is unlikely to be related to litigation risk. If the increase in audit fees for the countries operating in highly corrupted environments is mainly related to the increase

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<sup>47</sup>Transparency International UK indicates that many bribing activities are registered in offshore arrangements and off balance-sheet payments. Information about these operations can be found in this link: <https://www.transparency.org.uk> › plugins › includes › download.

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in compliance costs, then we should expect firms that have a higher number of subsidiaries to pay higher audit fees compared to the ones that have a lower number of subsidiaries.

To conduct this additional analysis on the number of subsidiaries we split the sample between firms with a high and a low number of subsidiaries using the median value. Firms that have a number of subsidiaries that is above the sample median are labeled “high number of subsidiaries” firms and the rest are labeled “low number of subsidiaries” firms. When we compare the results in Table 7, we see that highly exposed firms that have a low number of subsidiaries pay more audit fees as compared to the high-exposed firms that have a high number of subsidiaries. The difference between the DiDiD coefficients for the whole sample between the high- and low-exposed groups is statistically significant at 5%. For the non US subsample and the OECD non-US subsample the difference between the triple interactions is statistically significant at 10 and 5% respectively. This indicates that, for firms with high exposure, the increase in audit fees is not driven mainly by the increase in compliance costs. This holds for the whole sample and also for the subsamples. This provides robust evidence that the increase in audit fees for the high-exposure firms is mainly because of the high reputation/litigation risk perceived by the auditor. The compliance costs imposed on the auditor by the UK BA are unlikely to be the main determinants of the increase the audit fees.

## 1.5 Robustness Checks

In this section we discuss the results of the sensitivity analysis tests that we run to confirm the robustness of our results and the causal effect, ruling out alternative explanations.

### *Sample split Analysis*

Instead of having a triple-difference interaction, we split the sample into low- and high- exposure groups (Table 8). The results for the low-exposure group remain significant, and for the high-exposure group of firms still shows that there was an increase in audit fees. However, since these additional subsamples are smaller, with fewer observations, we believe that it is better to use the triple interaction for our analysis.

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### *Exposure using different indicators*

Taking into account the possibility of measurement errors or biases in our country level measurement for exposure to corrupt practices, we re-calculate our exposure measure using the Bribe Payers Index (BPI) and the World Governance Indicators(WGI) alternatively.

The BPI, taken from Transparency International, measures the likelihood of a company paying bribes at the country level. This measure is directly correlated with the bribery level of each country. The most recent indexes are published for the years 2008 and 2011. For this reason, we use the BPI of 2008 (2011) to construct the exposure measure for the years prior to (after) the UK BA. The exposure measure using BPI is constructed in the same way as our main measure of exposure where we used the CPI. It takes values from 0 to 10 with 0 (10) being a country whose business' sector is most (less) likely to bribe. The results presented in Table 9 remain the same as the main ones using the CPI.

The WGI, taken from the World Bank, assigns a number to each country every year based on aggregate and individual governance indicators. The indicators are variables that measure the quality of the country's institutions in protecting individual freedom such as voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law and control of corruption. Therefore, we expect this aggregate measure to be highly correlated with the level of bribery of each country. Results for this indicator are presented in Table 10. The main results regarding the diff-in-diffs variable and the triple interaction remain the same as in our main analysis.

### *Alternative matching procedure*

We have already discussed the importance of using a matching procedure to ensure the covariate balance between the treated and control group prior to the introduction of the UK BA, which is an important requisite for our identification method. In our main results we deal with this problem using entropy balancing. Here, as an alternative, we use a propensity score

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matching (PSM) procedure to match the observable characteristics prior to the treatment. We use the caliper method at 0.01, no replacement, and we require each treated observation to be matched to the closest neighbor control observation. We match the variables that relate to audit fees (controls) between the treated and control group prior to the law enforcement (2006-2008). We also match on industry, year and country.

Figure 3 displays the results from the PSM. The standardized bias of the covariates across the treatment and control group are close or equal to zero, which indicates that our PSM has been successful. Table 11 shows the re-estimation of the main results using PSM. After the passage of the act, firms under UK jurisdiction with low-exposure environments experience no change in audit fees compared to their counterparts. Also, affected firms that operate in high-exposure environments pay higher audit fees after the passage of the UK BA.

#### *Placebo tests to the law*

In order to confirm that the cause of our results is the passage of the law and not some random effect or some specific characteristics of our sample, we perform placebo regressions. In particular, we run regression (1.3.2) 3,000 times randomly assigning the law to different countries and firms. The results of these estimations should be insignificant. Therefore, we should observe a distribution of the coefficients derived from the placebo regression centered around zero. Moreover, the main coefficient of our results should be situated at tail of the distribution. The placebo regressions are executed without applying any matching method. In Figure 4 we can see the histogram of the placebo estimates of the  $\beta_5$  coefficient in equation (1.3.2). In Figure 4, the DiDiD placebo estimates have a mean of -0.0048, a standard deviation of 0.177, and a minimum and maximum value of -0.867 and 0.585, respectively. Since we perform the placebo regression on the unmatched sample analysis, we take the coefficient of the DiDiD variable from Table IA6. Our main coefficient of the DiDiD is 0.455 Table IA6 column (3). It is situated in the right tail of the placebo distribution. This indicates that the results of both of the DiDiD coefficients are not derived by pure randomness or affected by the differences between the two samples.

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### *The impact of the UK BA on audit quality*

We have already discussed that the auditor may act as a proactive gatekeeper and provide higher audit effort and higher audit quality after the passage of the UK BA, and this may be an alternative explanation for the increase in audit fees. In our main results we measure potential changes in audit quality using changes in abnormal operating expenses as a proxy. In this section we use abnormal discretionary accruals as an alternative quality measure. Another related potential explanation for the increase in audit fees could be that the client firms search for higher quality after the passage of the UK BA by switching to better quality auditors in the post-UK BA period. We explore this possibility estimating the before and after UK BA probability of employing a Big 4 auditor. In Table 12 we use abnormal discretionary accruals as an alternative quality measure. Specifically, we employ the discretionary accruals measures using the Dechow and Dichev 2002 model as further modified by J. Francis et al. 2005 and McNichols 2002, and the modified J. J. Jones 1991 model, as used by Kothari, Leone, and Wasley 2005. If the increase in audit fees for the treated firms operating in high-exposure environments is due to an increase in audit quality, we should expect to see a corresponding increase in this highly aggregated and general measure of earnings quality. Nevertheless, the results of this alternative measure show no change in the value of the discretionary accruals, even after we control for exposure.

In further untabulated analysis, we estimate the probability of employing a Big 4 auditor after the Act. This might well explain the increase in audit fees for the high-corrupt exposed firms. Results show that there is no statistically significant change in the probability of employing a Big 4 auditor after the act as opposed to prior to the UK BA. However, the sample is reduced to 240 observations and, therefore, we cannot base our explanations on this result.

### *Alternative earnings quality measures*

To further corroborate that the change in audit fees after the UK BA is not due to a change in audit quality, we measure audit quality indirectly using alternative earnings quality measures,

other than discretionary accruals. Specifically, following Leuz, Nanda, and Wysocki 2003<sup>48</sup>, we proxy earnings quality using measures that capture the actual reporting practices of a firm. This alleviates the concern that managers can exert discretion over accounting rules to distort reporting. Specifically, we use the following measures:

*Smoothing reported operating earnings using accruals.* The first measure identifies the degree of earnings smoothing using accruals. It is measured as the standard deviation of the firm's operating earnings divided by the standard deviation of the firm's cash flow from operations. We then take the median value of this ratio at the industry and year level and assign each firm to its respective median value according to the industry it operates in and the year. The lower the ratio, the more the smoothing activities performed by insiders. Cash flows from operations are derived by subtracting the accruals from the reported earnings.<sup>49</sup> We then use the following equation to calculate accruals.

$$Accruals_{i,t} = (\Delta CA_{i,1} - \Delta Cash_{i,1}) - (\Delta CL_{i,1} - \Delta STD_{i,1} - \Delta TP_{i,1}) - Depr_{i,1} \quad (1.6)$$

where  $\Delta CA_{i,1}$  is the change in current assets,  $\Delta Cash_{i,1}$  the change in cash and equivalents,  $\Delta CL_{i,1}$  the change in current liabilities,  $\Delta STD_{i,1}$  the change in short-term debt,  $\Delta TP_{i,1}$  the change in income payable,  $Depr_{i,1}$  the depreciation and amortization.<sup>50</sup>

*Correlation between accruals and CFO.* The second measure for earnings smoothing is estimated as the contemporaneous correlation between the change in accruals and the change in the operating cash flow for each industry and year. This correlation is calculated over the pooled set of firms for every industry and year. The larger the correlation, the higher the indication of earnings smoothing. In this case, the accruals are measured as in equation (1.6).

*The magnitude of accruals.* The third measure is the absolute value of the firm's accruals scaled

<sup>48</sup>Leuz, Nanda, and Wysocki 2003 employ these four different measures of earnings management at the country-level. However, due to the fact that our analysis is at the firm level, we construct the earnings management measures at industry and year level to make them more comparable to the accruals measures of Dechow and Dichev (2002) and of the modified J. J. Jones (1991) model.

<sup>49</sup>Leuz, Nanda, and Wysocki 2003 computed cash flows indirectly because of the unavailability of information on the cash flows for many countries. In an untabulated analysis, we recalculate the first measure of earnings smoothing using the direct measure of cash flows derived by the Osiris database. The results remain the same.

<sup>50</sup>Following Leuz, Nanda, and Wysocki 2003 we assign a value of zero if the firm does not have reported taxes or short-term debt.

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by the absolute value of the firm's operating cash flows. We then take the median value of this measurement for every industry and year level.

*Small loss avoidance.* It is measured as the ratio of small profits to small losses at the industry and year level, scaling it by total assets. "Small losses" is an indicator variable that takes the value of one if the firm's losses are in the -0.01 and 0.00 range and zero otherwise. Similarly, "Small profits" is an indicator variable that takes the value of one if the firm has a profit in the range of 0.00 and 0.01 and zero otherwise. We demand at least five observations of small losses for the industry-year group to be included in the calculation.

*Aggregate measure.* The final measure of earnings management is the aggregate measure of the four previous measures. To obtain this aggregate measure we rank each of the four previously mentioned measures per industry and year, so that higher values of the aggregate measure indicate a higher level of earnings management. We then obtain a mean average of the four.

Table 13 shows the results, which remain the same as the ones obtained from the absolute value of discretionary accruals using the Dechow and Dichev 2002 and the modified J. J. Jones 1991 model. The statistically insignificant DiD and DiDiD coefficients in all cases indicate that the earnings quality of the high- and low-exposure firms remains unchanged as a result of the UK BA passage.

### *Alternative sample periods*

In our primary analysis, we use a three-year period pre- and post- UK BA. Specifically, we use 2006-2008 as the pre-period and 2010-2012 as the post-period. In this analysis, we check whether the UK BA caused a longer lasting effect on audit fees. We also want to ensure that our results are not sensitive to the sample period. For that, we perform the analysis for the four-year period pre- and post- UK BA and the five-year period pre and post the law enforcement. The four-year (five-year) pre-UK BA period covers 2005-2008 (2004-2008) and the post-UK BA covers 2010-2013 (2010-2014). Table 14 shows the results. The main results remain robust for the four- and five-year pre-and post-UK BA.

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### *Confounding effect of the financial crisis*

Another possible explanation for our results would be that the crisis affected firms with high exposure to corruption (where bribery is more common and characterized mostly by developing markets) differently than those with low exposure to such markets. Three reasons allow us to exclude such explanations. First, according to previous literature, the financial crisis caused a downward pressure in audit fees in 2008 and then, by 2009, audit fees were back to normal levels (Ettredge, Elizabeth Emeigh Fuerherm, and C. Li 2014; Ettredge, Elizabeth E Fuerherm, et al. 2017). In untabulated analysis, if we exclude 2008, the results remain the same. Second, if we separate the sample between developing and developed countries, results are exactly the same for both samples. Third, we construct a financial exposure index that measures the influence of the financial crisis on each company, based on the percentage change of the gross domestic product (GDP) per capita from 2008 to 2009. The idea here is to separate firms based on the impact they suffered from the financial crisis. It is measured in the following way:

$$GDP_i = \sum_{c \in C} \left( (1 - \Delta GDP_c) \times \frac{\#Subsidiaries_{i,c}}{\#Subsidiaries_i} \right)$$

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 the relevant year,  $\#Subsidiaries_i$  is the total number of subsidiaries owned by firm  $i$ . The total influence of the financial crisis on a specific firm ( $GDP_i$ ) is the summation of the changes in GDP coming from all of its subsidiaries. We then construct a dummy variable out of the continuous  $GDP_i$  that takes the value of one if the GDP change is higher than the sample median, and zero otherwise. We then repeat the same analysis but, instead of using the exposure dummy, we use the new  $GDP_i$  dummy. Results are shown in Table 15. It shows no change in audit fees after 2010 for the firms that were more heavily affected by the financial crisis through their subsidiaries. This leads us to conclude that our main results are caused not by the financial crisis, but rather by the UK BA.

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## 1.6 Conclusion

Bribery represents “power abuse” and “moral decay” (Peiffer and Rose 2018), and it implies that “individuals entrusted with authority making decisions on behalf of an organization misusing their position for personal gain” (World Bank study 2014). Because of its important economic implications, bribery is a topic of great interest both for academics and regulators, and has spurred supranational efforts to reduce it, such as the OECD’s Convention on Combating Bribery of Foreign Public Officials in International Business Transactions. Nevertheless, because of its illegal nature and the implied need for secrecy, it is very difficult to gather wide evidence of bribery.

In this paper we use the need for secrecy as an opportunity, and employ audit fees as a measure of the costs of hiding bribery at the firm level. 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, which in this case includes both UK firms and firms with a UK subsidiary (treated firms). We argue that the passage of the Act causes a change in the auditing procedures, litigation and/or reputation costs of the firms affected by the Act relative to other firms. Our results indicate that, when operating in low-corruption exposure environments, firms affected by the UK BA experience no change in audit fees relative to non-affected firms. This is consistent with the idea that these firms are the ones that are less likely to bribe and thus less likely to be affected by the UK BA. However, we also find that for firms with a high exposure to corrupt practices in their business environments, the opposite is true, and affected firms suffer an important increase in audit fees relative to firms not affected by the new law, confirming that the costs imposed by bribery are reflected in the audit fees that firms have to pay to their gatekeepers.

We run different tests to tease out the different potential reasons that can explain this causal relationship between the passage of the law and the increase in audit fees. We are unable to find any evidence of changes in the quality of financial reporting, suggesting that it is difficult for auditors to reduce bribery at the firm level through their monitoring processes. Moreover, our results indicate that the big increase in audit fees cannot be justified as a simple reflection

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of higher compliance costs. Our tests identify the increase in reputational costs for the auditor as the main determinant of the increase in audit fees. For firms operating in high-corruption and bribery-risk environments, bribes seem to be a necessary cost of doing business. When the passage of the UK BA increases this cost for the affected firms, their auditors perceive higher reputational risks from engaging with these firms and demand a premium for bearing it. Therefore, our research design allows us to contribute to the literature on audit fees by showing a causal relationship between an increase in the reputational costs perceived by the auditor 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 10% 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.

Our research design has some limitations that should be taken into consideration for the evaluation of the result. First, we only use companies that do not change their country of incorporation or its subsidiaries after the enactment of the UK BA, which are probably less affected by the Act. Moreover, audit firms will react more when the auditor expects more stringent enforcement, which is less likely in high-risk countries, reducing the probability that our methodology captures the effect. Additionally, our sample is biased toward 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, to construct our main corruption-exposure measure we rely on the assumption that subsidiaries operate mainly in their country of incorporation. All of this implies that we are very likely to underestimate both the costs of bribery for the auditor and the impact of the UK BA. Nevertheless, even as an underestimation of the extent of bribery across firms, our results indicate that bribery is an important problem, especially for firms operating in environments where the need for bribery is perceived as high. Finally, on a more positive note, the evidence in the paper also shows that regulatory attempts to reduce bribery can have a significant impact.

## **Appendix 1**

### *Variable definitions*

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<b>Variables</b>	<b>Definition</b>	<b>Data source</b>
<b>Dependent Variables:</b>		
<b>Log (Audit Fees)</b>	It is the natural logarithm of audit fees.	Worldscope
<b>ABS(DA) DD</b>	The absolute value of discretionary accruals calculated using the Dechow and Dichev 2002 model modified further by McNichols 2002 and J. Francis et al. 2005.	Osiris
<b>ABS(DA) Jones</b>	The absolute value of discretionary accruals calculated using the modified J. J. Jones 1991 model as modified by Kothari, Leone, and Wasley 2005.	Osiris
<b>Abnormal OPEX</b>	The actual operating expenses minus the normal operating expenses following Dechow, Kothari, and Watts 1998 as it was further modified by Roychowdhury 2006.	Osiris
<b>Exposure Measures:</b>		
<b>Main measure: CPI</b>	Measure of Exposure using the Corruption Perception Index following Zeume 2017 and as it is indicated in the paper.	Orbis, Osiris, Transparency International (T
<b>BPI</b>	Measure of Exposure using the Bribery Perception Index. Calculated as the main measure of exposure substituting the BPI index instead of the CPI index and as it is indicated in the paper.	Orbis, Osiris, Transparency International (T

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<b>WGI</b>	Measure of Exposure using the World Governance Indicators. Calculated as the main measure of exposure substituting the WGI instead of the CPI index and as it is indicated in the paper.	Orbis, Osiris, World Bank
<b>GDP</b>	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 1 if the GDP change is higher than the sample median, and zero otherwise. Calculated as:	Orbis, Osiris, World Bank
$GDP_i = \sum_{c \in C} \left( (1 - \Delta GDP_{i,c}) \times \frac{\#Subsidiaries_{i,c}}{\#Subsidiaries_i} \right)$		
<b>Treated</b>	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.	Orbis, Osiris
<b>Post</b>	Dummy variable that takes the value of one if the firm-year observation is in 2010, 2011 or 2012, and zero otherwise.	Osiris
<b>Firm Controls:</b>		
<b>Leverage</b>	Total debt divided by total equity.	Osiris
<b>Loss</b>	Dummy variable that takes the value of one if the company had a net Loss in the particular year, and zero otherwise.	Osiris
<b>Asset Growth</b>	The year change of total assets.	Osiris

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<b>ROA</b>	Net profit divided by total assets.	Osiris
<b>Size</b>	The natural logarithm of total assets.	Osiris
<b>Tenure</b>	Difference between the date an auditor was appointed in the company and the date the auditor was dismissed.	Osiris
<b>BIG4</b>	Dummy variable that takes the value of one if the company is audited by a Big-4 auditing company in the particular year, and zero otherwise.	Osiris
<b>BM</b>	Book Value of equity divided by the equity value of equity.	Osiris
<b>Inventory Receivables</b>	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.	Osiris
<b>Quick</b>	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.	Osiris
<b>ROI</b>	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.	Osiris
<b>CFO</b>	Cash Flow from Operations divided by the previous year's total assets. This variable is used only in the regressions where the Abnormal OPEX and Accruals measures are the dependent variable.	Osiris

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**Revenue Growth**

The year change of total revenues. This variable is used only in the regressions where the Abnormal OPEX and Accruals measures are the dependent variable.

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Osiris

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## Appendix 2

### *Cases prosecuted under 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 of 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. This has been the result of an eight-year investigation started by a British whistleblower. Airbus is a Netherlands registered company, with headquarters in France whilst having UK subsidiaries. The bribe took place outside UK (specifically in Asia) but the company was prosecuted under section 7 of the UK Bribery act, which creates an offence if organisations fail to prevent bribery. The company entered into a deferred prosecution agreement (DPA) according to which the company agreed to pay the penalties and any prosecution for the corporation will be suspended for three years.

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

**Rolls Royce:** On January, 17th 2017 Rolls Royce was found guilty under the UK Bribery Act 2010, section 17(1) violation. For many years, Rolls Royce was using intermediaries in Malaysia, Indonesia, India, Russia and China to obtain engine and technology supply-related contracts. The company was penalised with the highest enforcement action for criminal conduct in the UK. In total, they were charged with £497 million, disgorgement of profit of around £260 million, a financial penalty of £239 million and Serious Fraud Office (SFO) costs of 13 million to settle charges with the UK BA. The average net loss of Rolls Royce for the years 2015-2017 is around 1 billion. The fine includes a 50% discount due to cooperation of Rolls Royce during

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investigation.

**XYZ company:** The company cannot be named due to ongoing investigations. They agreed to pay over £6 million in deferred prosecution agreement (DPA) costs and disgorgement of profit, plus a financial penalty of £352,000 relating to offences between 2004 and 2012. However, the costs have not been pursued yet because of inability of the company to pay them.

**Braid Group:** On the 5th April, 2016, Braid group was found guilty of failing to comply with the provisions of section 7 of the UK Bribery Act. Under section 7, companies can be deemed as not guilty in the court if they can prove that they have established all adequate procedures necessary to prevent bribery. In the case of Braid group, an employee incurred unauthorized expenses under the travelling, holidays, gifts and hotels items for a client as a form of bribing him. To cover the bribing, the employee used to deflate the invoices given by the same client. The company was penalized with £2.2 million for failing to comply with section 7.

**Sweett Group:** On February, 19th, 2016, Sweet Group failed to comply with section 7 of the UK BA. A subsidiary of the company was making illegal payments to secure construction contracts. 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 in 2015 and 2014.

**Standard Bank plc (now known as ICBC Standard Bank plc):** The Chinese Bank, The Standard Bank plc, was found guilty on the 30th of November, 2015, after making corrupt payments to secure contracts in Tanzania. The company failed to defend itself in the court as not adequate anti-corruption procedures were put in place (violation of section 7 of the act). The charges included a penalty of around \$16.8 million to the UK SFO, disgorgement of profit on transaction of \$8.4 million, compensation to the government of Tanzania of \$6m plus interest in \$1 million and costs of £330,000. The Standard Bank plc had a net loss in 2014 of \$ 344.6 million.

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**Brand-Rex Limited:** The company self-reported itself after it discovered it had some beneficial results from an illegal transaction by a third party. It was the first case convicted for failure to comply with section 7 of the UK BA. The penalty was 212,000 pounds.

**International Tubular Services Ltd:** The oil and gas company was found guilty on December, 15th 2014 after conducting illegal payments to secure contracts in Kazakhstan. The unlawful transaction came into light after the company's self-reporting. The company reported that an employee based in Kazakhstan was making all the illegal payments. The penalty was £172,000; which represents the profit the company made from securing these contracts.

**Gary West, Stuart Stone, James Whale (Sustainable Growth Group/Sustainable AgroEnergy):** It was the first conviction by the SFO under the BA. The three individuals were misleading investors, who were investing in jatropha oil investment, to make them believe that they had jatropha tree plantations in Cambodia. The green biofuel products were sold to UK investors primarily via self-invested pension plans (SIPPs). These individuals were deliberately misled into believing that Sustainable AgroEnergy owned land in Cambodia, that the land was planted with Jatropha trees, and that there was an insurance policy in place to protect investors if the crops failed. Mr West was sentenced to 13 years of imprisonment (4 years for bribery, concurrently); disqualified from acting as a director for 15 years. Mr Stone was sentenced to 6 years imprisonment (6 years for bribery, concurrently); disqualified from acting as a director for 10 years and Mr Whale was sentenced to 9 years' imprisonment; disqualified from acting as a director for 15 years.

**Besso Limited:** Failure to take additional procedures to prevent bribery under section 7 and was with a penalty of £315,000 from the Financial Conduct Authority (FCA).

**Yang Li:** A student at the University of Bath named Yang Li was found guilty under section 1 of the Bribery Act after offering his tutor £5,000 in order to give him a pass grade for

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his dissertation. Mr Li was also in possession of a fake fire arm with him. He was eventually sentenced in April, 2013 to 12 months of imprisonment and he was charged with £4,880 in costs.

**Mawia Mushtaq:** Mawia Mushtaq, was found guilty in December, 2012, after violating section 1 of the Bribery Act in an attempt to offer bribes to a licensing officer of Oldham. Mr Mushtaq, offered £200 or £300 in order to receive a “pass” on a taxi driving test that he previously failed. He served two months in prison (suspended for 12 months) and a two-month curfew from 6pm to 6am. (Greater Manchester Police and CPS)

**Munir Patel:** A court clerk, Munir Patel, was found guilty under section 2 of the UK BA after receiving bribes of £500 to affect the trial of a motoring offence. After conducting the investigation, it was found that he accepted bribes over 50 times in the past. He was charged in August, 2011 with 6 years of imprisonment for misconduct (later reduced to 4 years after a court Appeal in May 2012) and with 3 years of imprisonment for bribery.

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## Appendix 3

### *Main differences between the UK BA and the US FCPA*<sup>51</sup>

- The FCPA prohibits the payment of bribes to foreign public officials, whereas the UK BA makes an offence the act of bribing not only foreign public officials, but also any other private businessperson (commercial bribery).
- The FCPA considers a liability the offering of a bribe whereas the UK BA prohibits not only the offering, 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 controls” provisions. The UK BA creates a strict corporate liability if an organization, either incorporated in the UK or not (in case it has a UK subsidiary), has not implemented all the necessary anti-bribery procedures, programs and internal controls to prevent the bribe from happening. The very same offence is subject to be used as a defence if the firm can prove that it had implemented all adequate procedures for preventing the bribery, in case of prosecution.
- The FCPA allows a special form of facilitation payments, whereas the UK BA prohibits all kinds of facilitation payments.
- The penalties for bribing under the FCPA are up to \$250,000 and five years of imprisonment for individuals and a maximum of \$2 million fines for entities. The UK BA imposes unlimited fines for both entities and individuals. Individuals can also face prosecution of up to ten years of imprisonment.
- Under FCPA, the bribery is prosecuted if it is made with the intention to obtain or retain business, whereas the UK BA considers an offence any act of bribery regardless of the

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<sup>51</sup>More detailed information on the differences between the two legislations can be found in 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>. It can also be found in the following website of the international law firm White Case LLP based in the US: <https://www.whitecase.com>

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intention.

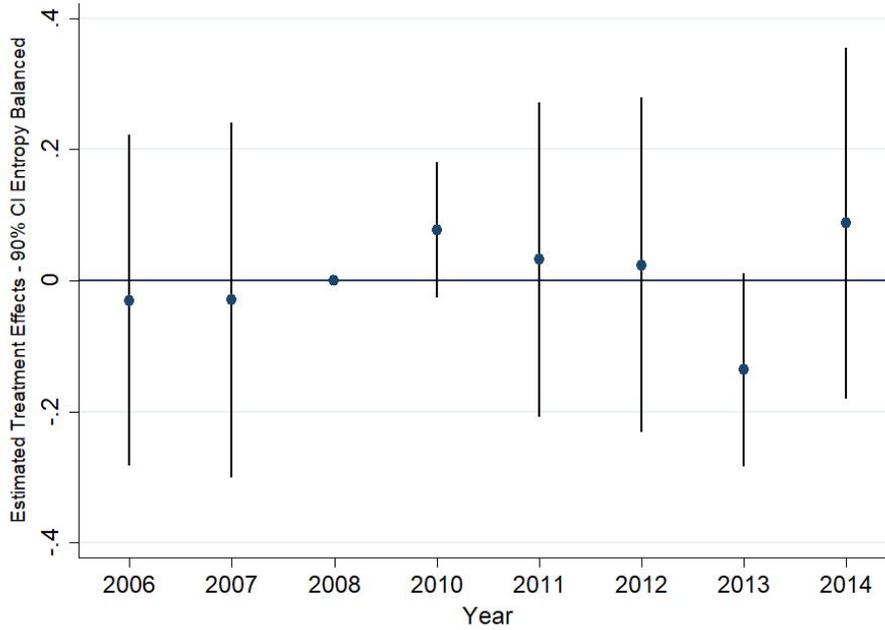
- Under the FCPA an enforcement is triggered in one of three ways: (i) all US companies, US citizens, any other foreign company that files periodic reports with the SEC or has any transaction going through the US banking system, are liable whilst acting inside or outside of the US territory; (ii) any non-US entity or person who acted illegally whilst on US territory; (iii) US subsidiaries bribing outside the US are also within the FCPA's reach. However, under the UK BA, all UK entities, UK citizens as well as any other non-UK company that is associated with the UK<sup>52</sup> are liable under UK jurisdiction regardless of the place where the bribe took place.<sup>53</sup>

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<sup>52</sup>Association with the UK can be established if the briber is the organization's agent, employee or a subsidiary. Hence, any non-UK company that performs business or part of a business in the UK through a UK subsidiary, is associated with the UK and is thus liable under the UK jurisdiction. This applies even if the bribery took place outside the UK by the non-UK company.

<sup>53</sup>Airbus, a registrant in Netherlands with its operational headquarters in France was found guilty under the UK Bribery Act on January, 2020. The company admitted offering bribes across 20 different countries (all outside the UK) but still the judge indicated that the entity is subject to prosecution due to the existence of two UK subsidiaries. The judgement made no reference neither to the bribery being associated to the UK subsidiaries nor to the turnover of the Group derived by the UK subsidiaries. This is a strong example as to the extraterritorial reach of section 7 of the UK BA.

**Figure 1** Difference in trends in audit fees pre- and post- UK BA: All sample

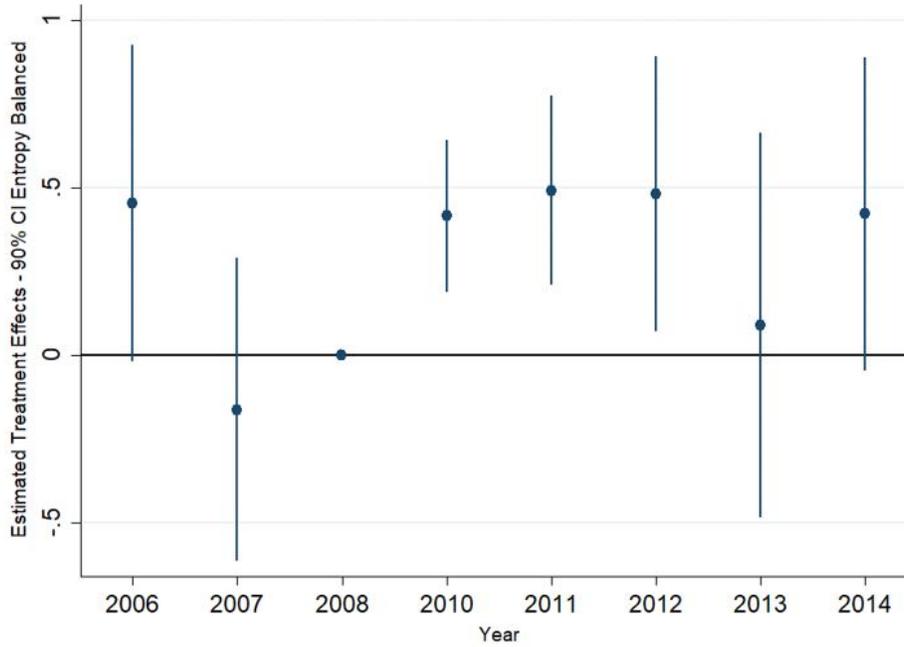


*Notes:* Figure 1 displays the difference in the evolution of the audit fees between the firms affected by the act (treated) and the firms not affected by it (control) in the pre- and post-UK BA period at a 90% confidence interval. We set the year prior to the UK BA enforcement (2008) as the base year, after deleting 2009 because it is considered of high uncertainty. The event year is set to be 2010 and we run the following regression after applying entropy balancing:

$$\text{Audit Fees}_{i,t} = \beta_{i,1} \text{Treated} \times T_{i,t-3} + \beta_{i,2} \text{Treated} \times T_{i,t-2} + \dots + \beta_{i,8} \text{Treated} \times T_{i,t+4} + \beta_{i,9} \text{Controls}_{i,t} + \alpha_i + \gamma_{\text{industry},t} + \epsilon_{i,t}$$

Where  $T_{i,t-n}$  equals one for firms  $n$ th year before the UK BA (i.e. before 2010) and  $T_{i,t+n}$  equals one for firms  $n$ th year after the UK BA (i.e. after 2010),  $\text{Controls}_{i,t}$  are firm control characteristics,  $\alpha_i$  are firm fixed effects and  $\gamma_t$  year interacted with industry fixed effects.

**Figure 2** Difference in trends in audit fees pre- and post-UK BA for high and low level of exposure groups: All sample

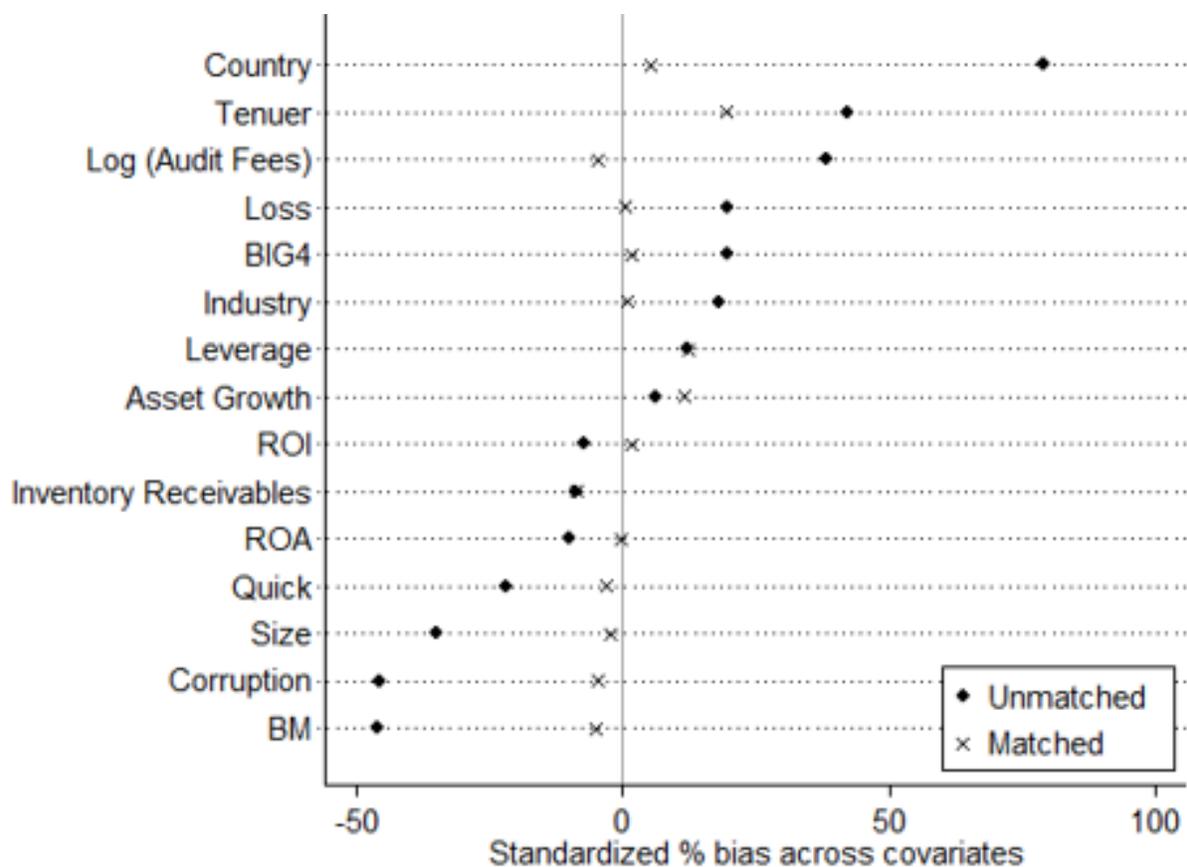


Notes: Figure 2 plots the differences in audit fees of high corruption exposure firms treated vs control group as compared to low corruption exposure firms treated vs control group in the pre- and post-UK BA period at 90% confidence interval. We set the year prior to the UK BA enforcement (2008) as the base year, after deleting 2009 because it is considered of high uncertainty. The event year is set to be 2010 and we run the following regression after applying entropy balancing:

$$\text{Audit fees}_{i,t} = \beta_{i,1} \text{Exposure}_{i,t} + \beta_{i,2} \text{Treated} \times \text{Exposure}_{i,t} + \beta_{i,3} \text{Treated} \times T_{i,t-3} + \beta_{i,4} \text{Treated} \times T_{i,t-2} + \dots \beta_{i,10} \text{Treated} \times T_{i,t+4} + \beta_{i,11} \text{Exposure}_{i,t-3} \times T_{i,t-3} + \dots \beta_{i,18} \text{Exposure}_{i,t+4} \times T_{i,t+4} + \beta_{i,19} \text{Treated} \times T_{i,t-3} \times \text{Exposure}_{i,t-3} + \dots \beta_{i,26} \text{Treated} \times T_{i,t+4} \times \text{Exposure}_{i,t+4} + \beta_{i,27} \text{Controls}_{i,t} + \alpha_i + \gamma_{\text{industry},t} + \epsilon_{i,t}$$

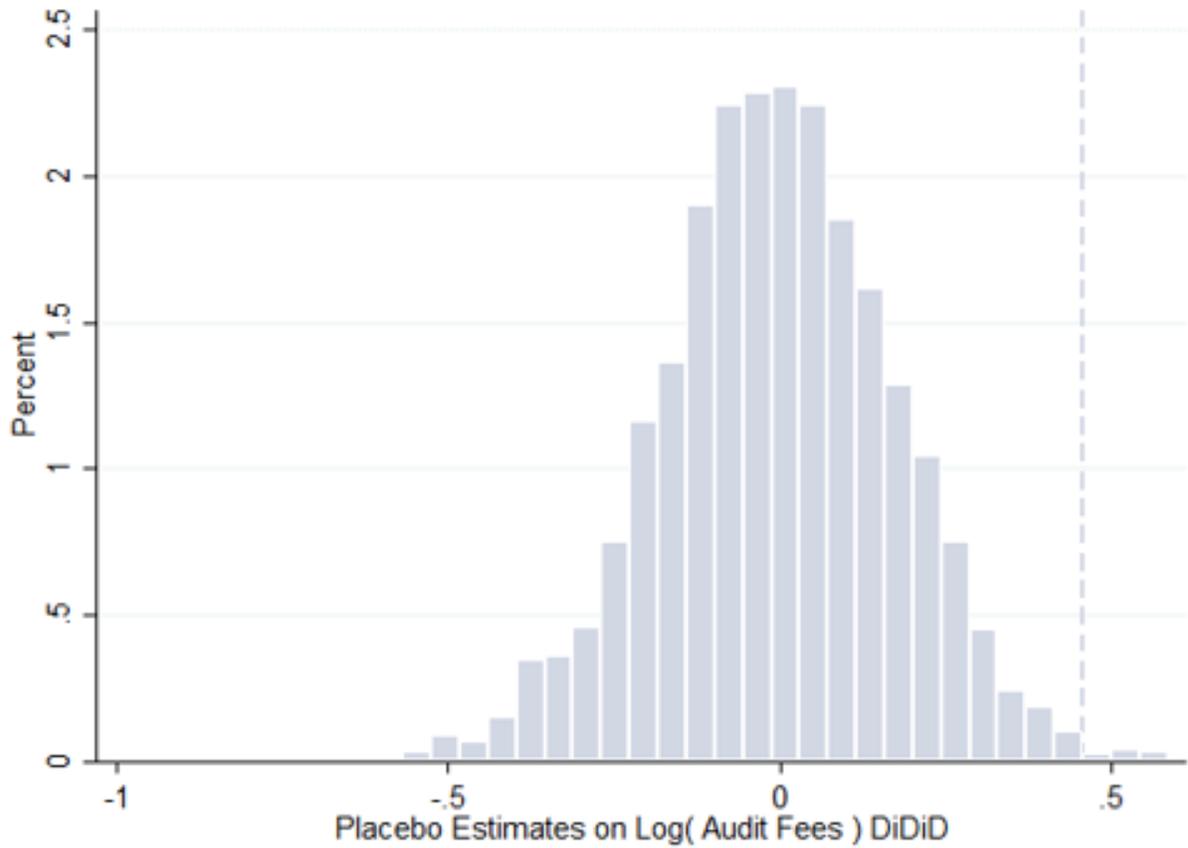
Where  $T_{i,t-n}$  equals one for firms nth year before the UK BA (i.e. before 2010) and  $T_{i,t+n}$  equals one for firms nth year after the UK BA (i.e. from 2010),  $\text{Controls}_{i,t}$  are firm control characteristics,  $\alpha_i$  are firm fixed effects and  $\gamma_t$  year interacted with industry fixed effects. The coefficient plot is constructed taking into account only the triple interactions in the regression.

**Figure 3** Sample matching after propensity score matching



*Notes:* Figure 3 displays the effectiveness of the 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 itself. We match based on all the control variables as well the country and industry the firm operates in. We match at no replacement and we require each observation of the firms affected by the act (treated) to be matched to the closest neighbour among the firms not affected by the act (control). The standardized bias between treated and control groups is close to zero achieving a similarity between the two groups before the passage of the UK BA in 2010.

**Figure 4** Placebo estimates of the DiDiD



*Notes:* Figure 4 displays histograms on coefficients of the placebo regressions of the triple difference (Treated  $\times$  Post  $\times$  Exposure) variable. The coefficients are derived after estimating regression (1.3.2) 3000 times assigning the law to different firms and years. The histogram displays the placebo estimates on the triple difference coefficient. The dash line indicates the coefficient of Treated  $\times$  Post  $\times$  Exposure (0.455) variable obtained in Table IA6 column (3). 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: Summary statistics for pre- and post- UK BA period

	Obs	mean	sd	min	e(p25)	e(p50)	e(p75)	max
Exposure	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	12.437	13.461	14.845	17.837
Abnormal OPEX	3113	-0.016	0.171	-0.494	-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	-0.328	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	-0.564	0.015	0.043	0.079	0.271
Asset Growth	7712	0.117	0.291	-0.374	-0.012	0.055	0.153	1.776
Revenue Growth	7618	0.122	0.297	-0.555	-0.007	0.075	0.181	1.715
Tenure	7780	3.846	3.558	0.000	1.000	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: Summary statistics of the pre-UK BA period

	Treated			Control			T-test
	Obs	mean	sd	Obs	mean	sd	
Exposure	1027	0.327	0.469	2834	0.538	0.499	-0.211***
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*

Notes: This table provides summary statistics for all the variables used in this analysis. 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 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. All variables are as defined in Appendix 1. \*, \*\*, and \*\*\* represent significance levels of 10%, 5%, and 1%, two-tail levels respectively.

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) Exposure	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>	<b>0.043</b>	<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>	<b>-0.027</b>	<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>	<b>-0.022</b>	<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

Notes: 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 as defined in Appendix 1.

**TABLE 3:**  
Entropy balancing: Descriptive statistics

<b>Panel A: Before balancing</b>	<b>Treated</b>		<b>Control</b>	
	mean	variance	mean	variance
Log (Audit Fees)	14.56	2.42	13.45	2.57
Exposure	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>Treated</b>		<b>Control</b>	
	mean	variance	mean	variance
Log (Audit Fees)	14.56	2.42	14.56	2.42
Exposure	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

*Notes:* Panel A of this table shows the descriptive statistics for both treated and control group 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 treated and control group after the entropy balancing, where identical means and variances are achieved for all relevant characteristics relative to the treatment except from the treatment itself. All variables are as defined in Appendix 1.

TABLE 4:  
Effect of the UK BA on audit fees after entropy balancing

Dependent Variable: Log (Audit Fees)	(1)	(2)	(3)
Treated	-0.033 (-0.274)		
Post	0.358*** (3.422)		
Treated × Post	0.062 (0.397)	0.030 (0.176)	-0.049 (-0.420)
Leverage	0.200*** (3.045)	0.045 (1.487)	0.048 (1.384)
Inventory Receivables	-1.519*** (-4.802)	-0.431 (-1.207)	-0.122 (-0.223)
Quick	-0.098 (-1.579)	0.070 (1.004)	0.088** (2.365)
ROI	1.686 (1.592)	-1.671** (-2.249)	-1.693** (-2.112)
Loss	0.561*** (4.007)	0.080 (0.787)	0.066 (0.802)
BIG4	0.185** (2.309)	-0.060 (-0.775)	-0.125 (-0.966)
Asset Growth	-0.440*** (-2.723)	0.043 (0.389)	0.086 (0.703)
ROA	1.822* (1.850)	0.663 (1.251)	0.726 (1.316)
Size	0.273*** (12.296)	0.245 (0.862)	0.191 (0.656)
Tenure	0.028*** (3.061)	-0.008 (-1.447)	0.001 (0.160)
BM	-0.020*** (-14.345)	0.007*** (3.691)	0.007*** (3.826)
Constant	10.586*** (25.261)	10.859** (2.277)	11.632** (2.312)
Year FE	N	Y	N
Firm FE	N	Y	Y
Year-Industry FE	N	N	Y
Observations	1,943	1,902	1,884
Adjusted R-squared	0.408	0.915	0.921

*Notes:* This table shows the difference-in-difference effect of the UK Bribery Act on audit pricing in the post-BA period, 2010-2012, compared to the pre-BA period, 2006-2008. The dependent variable is the natural logarithm of audit fees paid by the parent company. Fixed Effects are as indicated. Clustering of standard errors is at country level. T-statistics are reported in parentheses. All variables are as defined in Appendix 1. \*, \*\*, and \*\*\* represent significance levels of 10%, 5%, and 1%, two-tail levels respectively.

TABLE 5:  
Effect of exposure to corruption on audit fees after entropy balancing

Dependent Variable: Log (Audit Fees)	All		Non-FCPA		OECD		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Treated	0.155 (0.425)						
Post	0.356 (0.967)						
Treated × Post	-0.172 (-0.567)	-0.168 (-0.769)	-0.256 (-1.411)	-0.187 (-0.873)	-0.212 (-1.104)	-0.177 (-0.776)	-0.207 (-1.012)
Treated × Post × Corruption	0.455** (2.166)	0.381** (2.323)	0.403** (2.777)	0.545** (2.545)	0.529** (2.559)	0.535** (2.324)	0.513** (2.331)
Corruption	0.495** (2.207)	-0.047 (-0.416)	-0.082 (-1.122)	0.076 (1.261)	0.031 (0.463)	0.064 (0.956)	-0.002 (-0.032)
Treated × Corruption	-0.424 (-1.211)	-0.391*** (-4.212)	-0.391*** (-4.254)	-0.547*** (-5.641)	-0.533*** (-5.388)	-0.522*** (-5.012)	-0.489*** (-5.341)
Post Period × Corruption	-0.067 (-0.550)	-0.007 (-0.124)	-0.020 (-0.260)	-0.146 (-0.930)	-0.119 (-0.809)	-0.151 (-0.857)	-0.118 (-0.762)
Leverage	0.193** (2.067)	0.032 (1.268)	0.035 (1.058)	0.084 (1.704)	0.096* (1.863)	0.082 (1.588)	0.092* (1.808)
Inventory Receivables	-1.757*** (-5.906)	-0.406 (-0.881)	-0.054 (-0.095)	0.016 (0.029)	-0.226 (-0.310)	-0.096 (-0.157)	-0.587 (-0.789)
Quick	-0.106 (-1.378)	0.061 (0.961)	0.077** (2.193)	0.105* (1.952)	0.040 (0.713)	0.114* (1.766)	0.035 (0.483)
ROI	1.112** (2.404)	-1.604** (-2.280)	-1.666** (-2.100)	-1.676* (-1.997)	-1.594 (-1.429)	-1.808* (-2.023)	-1.694 (-1.375)
Loss	0.465*** (3.933)	0.078 (0.815)	0.064 (0.835)	0.047 (0.411)	0.053 (0.535)	0.043 (0.375)	0.054 (0.516)
BIG4	0.185 (1.168)	-0.061 (-0.738)	-0.122 (-0.961)	-0.132 (-0.747)	-0.149 (-0.657)	-0.141 (-0.717)	-0.158 (-0.649)
Asset Growth	-0.374* (-1.816)	0.021 (0.213)	0.067 (0.590)	0.104 (0.861)	0.100 (0.700)	0.138 (1.059)	0.132 (0.865)
ROA	2.053* (1.808)	0.723 (1.286)	0.841 (1.370)	0.633 (1.116)	0.806 (1.108)	0.638 (1.005)	0.762 (0.924)
Size	0.252*** (3.098)	0.281 (1.110)	0.216 (0.803)	0.274 (0.917)	0.249 (0.912)	0.214 (0.663)	0.175 (0.617)
Tenure	0.027 (1.528)	-0.008 (-1.194)	0.002 (0.194)	-0.015 (-1.507)	-0.007 (-0.442)	-0.013 (-1.138)	-0.004 (-0.244)
BM	-0.019*** (-3.904)	0.007*** (3.616)	0.007*** (3.965)	0.006** (2.770)	0.006*** (3.030)	0.006** (2.393)	0.006** (2.734)
Year FE	N	Y	N	Y	N	Y	N
Firm FE	N	Y	Y	Y	Y	Y	Y
Year-Industry FE	N	N	Y	N	Y	N	Y
Sum of Coefficients: Treated × Post + Treated × Post × Corruption	0.283	0.213	0.147	0.358	0.317	0.358	0.306
F-test	2.05	2.19	4.29**	3.10*	3.69*	2.51	3.03*
Observations	1,943	1,902	1,884	1,660	1,638	1,465	1,443
Adjusted R-squared	0.424	0.917	0.923	0.912	0.916	0.909	0.914

*Notes:* 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. Columns (1) and (2) refer to the analysis made on the whole sample of firms. Columns (3) and (4) show the analysis on the OECD sub-sample of firms. 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. Columns (2) and (3) show the results of the triple difference-in-difference for the whole sample. Fixed Effects are as indicated. Clustering of standard errors is at country level. T-statistics are reported in parentheses. All variables are as defined in Appendix 1. \*, \*\*, and \*\*\* represent significance levels of 10%, 5%, and 1%, two-tail levels respectively.

TABLE 6:  
Effect of exposure to corruption on abnormal OPEX after entropy balancing

Dependent Variable: Abnormal OPEX	All		Non-FCPA		OECD	
	(1)	(2)	(3)	(4)	(5)	(6)
Treated × Post	-0.020 (-0.835)	-0.009 (-0.510)	-0.030 (-1.156)	-0.012 (-0.651)	-0.047 (-1.530)	-0.028 (-1.208)
Treated × Post × Corruption	0.025 (0.860)	0.022 (1.048)	0.033 (0.955)	0.014 (0.660)	0.042 (1.183)	0.025 (1.052)
Controls	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: Treated × Post + Treated × Post × Corruption	0.005	0.013	0.003	0.002	-0.005	-0.003
F-test	0.79	0.71	1.18	0.48	1.91	1.37
Observations	1,795	1,791	1,751	1,747	1,583	1,579
Adjusted R-squared	0.666	0.696	0.686	0.720	0.711	0.748

*Notes:* 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. In columns (1)-(2) we present the results for the whole sample of firms and in columns (3) and (4) the results for the OECD sub-sample. Fixed Effects are as indicated. Clustering of standard errors is at country level. T-statistics are reported in parentheses. All variables are as defined in Appendix 1.

TABLE 7:  
Identifying potential changes in compliance and monitoring efforts.

Dependent variable: Log (Audit Fees)	All		Non-FCPA		OECD	
	(1)	(2)	(3)	(4)	(5)	(6)
Treated × Post	-0.371 (-1.604)	0.260 (0.957)	-0.267 (-1.437)	0.306 (1.006)	-0.251 (-1.308)	0.201 (0.481)
Treated × Post × Corruption	0.379* (1.869)	0.929*** (3.794)	0.557*** (3.019)	0.784** (2.459)	0.507** (2.637)	1.096*** (4.004)
Control	Y	Y	Y	Y	Y	Y
Year-Industry FE	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Sample	High #	Low #	High #	Low #	High #	Low #
Sum of Coefficients: Treated × Post + Treated × Post × Corruption	0.008	1.189	0.290	1.09	0.256	1.07
F-test	3.07*	7.73	5.16**	0.61	4.08*	1.74
Observations	1,103	764	975	669	891	528
Adjusted R-squared	0.913	0.952	0.914	0.918	0.911	0.925

Notes: This table shows the effect of the UK Bribery Act and corruption exposure on audit fees on alternative samples according to firm complexity. The results are after applying entropy matching. The dependent variable is the natural logarithm of audit fees paid by the parent company. The table shows the effects on audit fees after splitting the sample between those firms that have a high- or low- number of subsidiaries for the international sample (columns (1) and (2)) and for the OECD sub-sample (columns (3) and (4)). “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 the sample median. Fixed Effects are as indicated. Clustering of standard errors is at country level. T-statistics are reported in parentheses. All variables are as defined in Appendix 1. \*, \*\*, and \*\*\* represent significance levels of 10%, 5%, and 1%, two-tail levels respectively.

TABLE 8:  
Effect of exposure to corruption on audit fees after entropy balancing- sample split

Dependent Variable: Log (Audit Fees)	All				Non-FCPA				OECD			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Treated × Post	0.192** (2.554)	0.100* (1.740)	-0.182 (-0.807)	-0.218 (-1.180)	0.391*** (4.507)	0.407*** (5.360)	-0.163 (-0.734)	-0.214 (-1.220)	0.378*** (5.792)	0.385*** (5.227)	-0.152 (-0.640)	-0.231 (-1.244)
Sample	High	High	Low	Low	High	High	Low	Low	High	High	Low	Low
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year-Industry FE	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y
Observations	1,045	1,025	816	800	900	879	726	708	779	754	653	629
Adjusted R-squared	0.926	0.938	0.913	0.920	0.920	0.928	0.899	0.911	0.921	0.928	0.896	0.909

Notes: 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, 2006-2008, after performing the entropy balancing method and after splitting the sample into high- and low-corruption exposed firms. The results are after applying entropy matching. The dependent variable is the logarithm of audit fees paid by the parent company. The “sample” variable indicates “High” or “Low” corruption exposure. Columns (1)-(4) show the results for the whole sample. Columns (5)- (8) show the results for the OECD sub-sample of firms. Fixed Effects are as indicated. Clustering of standard errors is at country level. T-statistics are reported in parentheses. All variables are as defined in Appendix 1. \*, \*\*, and \*\*\* represent significance levels of 10%, 5%, and 1%, two-tail levels respectively.

TABLE 9:  
Alternative measurement of exposure to corruption - bribe payers index

Dependent variable: Log (Audit Fees)	All		Non-FCPA		OECD	
	(1)	(2)	(3)	(4)	(5)	(6)
Treated × Post	-0.270 (-1.196)	-0.356* (-2.051)	-0.241 (-1.058)	-0.286 (-1.492)	-0.232 (-1.011)	-0.273 (-1.383)
Treated × Post × Corruption	0.603** (2.708)	0.594*** (3.772)	0.607*** (2.981)	0.645*** (3.124)	0.624*** (2.991)	0.643*** (3.170)
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: Treated × Post + Treated × Post × Corruption	0.333	0.229	0.366	0.359	0.392	0.37
F-test	3.96*	8.63***	4.26*	6.31**	4.05*	5.86**
Observations	1,938	1,920	1,717	1,695	1,522	1,500
Adjusted R-squared	0.927	0.932	0.924	0.929	0.923	0.927

*Notes:* This 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 Bribe Payers Index (BPI) as an alternative measure for capturing corruption exposure. The results are after applying entropy matching. The dependent variable is the logarithm of audit fees paid by the parent company. “Exposure” is calculated as our main measure of exposure to corruption using, instead of the CPI, the BPI. Columns (1)-(2) show the effect on audit fees for the whole sample of firms. Columns (3)-(4) show the same results for the OECD sub-sample. Fixed Effects are as indicated. Clustering of standard errors is at country level. T-statistics are reported in parentheses. All variables are as defined in Appendix 1. \*, \*\*, and \*\*\* represent significance levels of 10%, 5%, and 1%, two-tail levels respectively.

TABLE 10:  
Alternative measurement of exposure to corruption - world governance indicators

Dependent variable: Log (Audit Fees)	All		Non-FCPA		OECD	
	(1)	(2)	(3)	(4)	(5)	(6)
Treated × Post	-0.175 (-0.783)	-0.238 (-1.547)	-0.191 (-0.985)	-0.221 (-1.377)	-0.191 (-0.959)	-0.225 (-1.337)
Treated × Post × Corruption	0.379* (1.825)	0.462*** (3.756)	0.562*** (3.269)	0.544*** (3.473)	0.576*** (3.371)	0.547*** (3.517)
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: Treated × Post + Treated × Post × Corruption	0.204	0.224	0.371	0.323	0.385	0.322
F-test	1.71	7.04**	4.42***	6.54**	4.45**	6.30**
Observations	1,947	1,932	1,717	1,699	1,547	1,528
Adjusted R-squared	0.947	0.951	0.934	0.938	0.933	0.938

*Notes:* This 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 World Governance Indicators (WGI) as an alternative measure for capturing corruption. The results are after applying entropy matching. The dependent variable is the logarithm of audit fees paid by the parent company. “Exposure” is calculated as our main measure of exposure to corruption using, instead of the CPI, the WGI. Columns (1)-(2) show the effect on audit fees for the whole sample of firms. Columns (3)-(4) show the same results for the OECD sub-sample. Fixed Effects are as indicated. Clustering of standard errors is at country level. T-statistics are reported in parentheses. All variables are as defined in Appendix 1. \*, \*\*, and \*\*\* represent significance levels of 10%, 5%, and 1%, two-tail levels respectively.

TABLE 11:  
Effects of exposure to corruption on audit fees after propensity score matching

Dependent variable: Log (Audit Fees)	All		Non-FCPA		OECD	
	(1)	(2)	(3)	(4)	(5)	(6)
Treated × Post	-0.194 (-0.881)	-0.178 (-0.920)	-0.126 (-0.597)	-0.116 (-0.634)	-0.141 (-0.638)	-0.142 (-0.733)
Treated × Post × Corruption	0.462* (1.751)	0.442** (2.167)	0.320* (1.937)	0.283* (2.055)	0.248 (1.527)	0.233* (1.872)
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: Treated × Post + Treated × Post × Corruption	0.268	0.264	0.194	0.399	0.107	0.091
F-test	2.00	2.73	1.47	1.72	1.05	1.45
Observations	855	847	797	779	678	659
Adjusted R-squared	0.925	0.929	0.923	0.922	0.918	0.912

*Notes:* This 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 on the variables that relate to audit fees and on audit fees itself. We match on no replacement and we require each treated observation to be matched to the closest neighbour control observation. The dependent variable is the natural logarithm of audit fees paid by the parent company. In columns (1) and (2) we see the effects of both the UK BA and exposure level on audit fees for the whole sample of firms. Columns (3) and (4) relate to OECD sub-sample of firms. Fixed Effects are as indicated. Clustering of standard errors is at country level. T-statistics are reported in parentheses. All variables are as defined in Appendix 1. \*, and \*\* represent significance levels of 10%, and 5%, two-tail levels respectively.

TABLE 12:  
Effect of exposure to corruption on the financial reporting quality after entropy balancing

Dependent Variables	ABS(DA) DD		ABS(DA) Jones	
	(1)	(2)	(3)	(4)
Treated × Post	0.001 (0.207)	0.004 (0.650)	0.000 (0.115)	-0.007 (-1.121)
Treated × Post × Exposure		-0.005 (-0.588)		0.011 (1.344)
Controls	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y
Year-Industry FE	Y	Y	Y	Y
Sum of Coefficients: Treated × Post + Treated × Post × Exposure		-0.001		0.004
F-test		0.4		1.7
Observations	1,045	1,045	1,045	1,045
Adjusted R-squared	0.269	0.273	0.419	0.419

*Notes:* This table shows the effect of the UK Bribery Act and corruption exposure in the operating expenses component and on earnings quality. This table also shows the effects of exposure to corruption together with the passage of the UK BA on audit fees. The results are calculated after performing entropy balancing. In columns (1)-(2) the dependent variable is the absolute value of discretionary accruals as it is calculated by Dechow and Dichev 2002 model and as it was further modified by J. Francis et al. 2005 and McNichols 2002. In columns (3)-(4), the dependent variable is the absolute value of discretionary accruals as it is calculated by the modified J. J. Jones 1991 model as it was further modified by Kothari, Leone, and Wasley 2005. Standard errors are clustered at country level. Fixed Effects are as indicated. Clustering of standard errors is at country level. T-statistics are reported in parentheses. All variables are as defined in Appendix 1.

TABLE 13:  
Effect of exposure to corruption on earnings management

Dependent Variables:	Smoothing	Correlation	Discretion	Small-Loss	Aggregate Measure
	(1)	(2)	(3)	(4)	(5)
Treated × Post	0.044 (1.612)	0.000 (0.028)	7.711 (1.604)	-0.010 (-0.183)	-5.625 (-0.474)
Treated × Post × Exposure	-0.077** (-2.104)	0.022* (1.850)	-7.439 (-1.612)	-0.071 (-1.553)	-18.411 (-1.411)
Controls	Y	Y	Y	Y	Y
Year-Industry FE	Y	Y	Y	Y	Y
Sum of Coefficients: Treated × Post + Treated × Post × Exposure	-0.033	0.022	0.272	-0.081	-24.036
F-test	7.60**	1.58	2.62	0.42	0.3
Observations	4,491	4,454	4,480	4,491	4,491
Adjusted R-squared	0.565	0.758	0.103	0.889	0.684

*Notes:* This table shows the effect of the UK Bribery Act and corruption exposure on earnings quality in the post-BA period, 2011-2012, compared to the pre-BA, 2007-2008, period. The dependent variables are constructed based on the earnings management measures used by Leuz et al. (2003). Columns (1)-(4) show the results based on each earnings management measures. Column (5) presents the results after aggregating all the four earnings management measures together. Fixed Effects are as indicated. Clustering of standard errors is at country level. T-statistics are reported in parentheses. All variables are as defined in Appendix 1. \*, and \*\*, represent significance levels of 10%, and 5%, two-tail levels respectively.

TABLE 14:  
Effect of exposure to corruption on audit fees for alternative sample periods

Dependent variable: Log (Audit Fees)	All	Non-FCPA	OECD	All	Non-FCPA	OECD
	(1)	(2)	(3)	(4)	(5)	(6)
Treated × Post	-0.316*	-0.186	-0.182	-0.300	-0.191	-0.191
	(-1.811)	(-0.931)	(-0.873)	(-1.558)	(-0.963)	(-0.935)
Treated × Post × Corruption	0.395***	0.536**	0.525**	0.367**	0.523**	0.516**
	(3.119)	(2.620)	(2.374)	(2.777)	(2.567)	(2.376)
Control	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Year-Industry FE	Y	Y	Y	Y	Y	Y
Sample	+/- 4	+/- 4	+/- 4	+/- 5	+/- 5	+/- 5
Sum of Coefficients: Treated × Post + Treated × Post × Exposure	0.079	0.35	0.343	0.067	0.332	0.325
F-test	5.93**	3.44*	2.88	4.45**	3.42*	3.02
Observations	2,227	1,966	1,738	2,301	2,016	1,783
Adjusted R-squared	0.908	0.907	0.903	0.904	0.906	0.904

*Notes:* 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)-(2) show the results of a four year post-BA period compared to three year pre-BA period. "Post" in these columns takes the value of one for the four year period after the UK BA (2010-2013) and zero otherwise (2005-2008). Columns (3)-(5) show the results of a five year post-BA period compared to four year pre-BA period. "Post" in these columns takes the value of one for the five year period after the UK BA (2010-2014) and zero otherwise (2004-2008). Fixed Effects are as indicated. Clustering of standard errors is at country level. T-statistics are reported in parentheses. All variables are as defined in Appendix 1. \*, \*\*, and \*\*\* represent significance levels of 10%, 5%, and 1%, two-tail levels respectively.

TABLE 15:  
Effect of the financial crisis on the results

Dependent variable: Log (Audit Fees)	All		Non-FCPA		OECD	
	(1)	(2)	(3)	(4)	(5)	(6)
Treated × Post	-0.011	-0.026	0.113	0.099	0.146	0.121
	(-0.069)	(-0.344)	(0.559)	(0.804)	(0.719)	(0.929)
Treated × Post × GDP	0.264	0.180	0.172	0.144	0.112	0.093
	(1.078)	(1.212)	(0.598)	(0.971)	(0.363)	(0.513)
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: Treated × Post + Treated × Post × GDP	0.253	0.15	0.285	0.243	0.258	0.214
F-test	0.51	1.00	0.01	0.03	0.00	0.01
Observations	2,275	2,257	1,972	1,950	1,777	1,755
Adjusted R-squared	0.943	0.948	0.951	0.955	0.951	0.955

*Notes:* This table shows the effect of the financial crisis on the results. The dependent variable is the natural logarithm of audit fees paid by the parent company. "GDP" is the measure of the impact of the financial crisis, calculated as shown in Appendix 1. Columns (1)-(2) show the effect on audit fees for the whole sample of firms. Columns (3)-(4) show the same results for the OECD sub-sample. Fixed Effects are as indicated. Clustering of standard errors is at country level. T-statistics are reported in parentheses. All variables are as defined in Appendix 1.

# Chapter 2

## Distracted Auditors: Evidence from Lawsuits against Audit Clients

### 2.1 Introduction

In this paper we examine how valuable auditors' time is. We are motivated by PCAOB's concerns regarding auditors' heavy workloads and subsequent audit quality. The audit profession is characterized by strict deadlines, heavy workloads, projects completed under pressure and physical distress which could ultimately lead to an impairment of the audit quality. The PCAOB has specifically expressed its concerns on whether professional scepticism could be undermined due to particular circumstances inherent in the audit environment ((PCAOB) 2012b,2012). Such circumstances involve heavy workloads and time pressures on audit teams that could eventually induce a precipitated completion of audits leading to lower audit quality.

Particularly, during busy seasons, auditors tend to deliver lower quality of audits (Coram, Ng, and Woodliff 2004; Heo, Kwon, and Tan 2020; Kelley and Margheim 1990) because when stress exceeds an optimal threshold, performance starts to decline (Yerkes and Dodson 1908). Experimental research conveys that, auditors are inclined to reduce numbers of testing when they face time budget constraints (Asare, Gregory M Trompeter, and A. M. Wright 2000; Houston 1999; McDaniel 1990). Other studies, proxy the workload imbalance using audit fees of clients that have same fiscal year ends (López and Peters 2012), audit delay (Lambert et al. 2017) or

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audit engagements (Heo, Kwon, and Tan 2020). These studies, however, treat auditors' lack of time as a short term deterrence effect on the quality they deliver. Further, auditors' time pressure is seen as a situation whose consequences will be evident in all of their clients. Similarly, literature on audit offices argues that client firms that belong to the same portfolio of an audit office, tend to receive similar audit quality (chaney2002shredded, krishnan2005did) due to a contagious effect francis2013contagion.

We depart from previous literature, and we test the significance and value of auditors' time to their subsequent audit engagements of client firms that belong to the same portfolio.<sup>1</sup> Auditors act as gatekeepers and information providers, ensuring shareholders and investors that the financial statements are free of material errors and represent the true and fair view of the company (DeAngelo 1981). For that, when auditors encounter workload imbalance, client-firms suffer as auditors' ability to adequately monitor all of their clients deteriorates and the value relevance of "time" on the audited financial statements for their different clients becomes more important.

A decrease in the audit quality though, could be either associated with auditors' busyness, or with auditor's implicit quality. In this study, the identification strategy tries to disentangle these two effects by exploiting distractions faced by an auditor, due to some clients, that are exogenous to the other clients in question, whilst holding auditors' talent constant. Specifically, we exploit non-accounting related class action suits against audit clients that are also SEC investigated. These suits are a plausibly exogenous shock that increases auditors' busyness. Since time and resources are limited, at least for the short run, auditors that need to pay more attention to the sued client, should shift time and resources away from its other clients and towards the firm that is sued.

We believe this distraction event is an appropriate research design for three reasons. First, non-accounting lawsuits are not related to the auditor. To ensure this, we exclude class actions suits that name the auditor as the defendant or are related to accounting irregularities. Hence, the

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<sup>1</sup>Following previous literature audit offices are defined as the combination of audit firm and audit office location (J. R. Francis and M. D. Yu 2009; J. R. Francis and Michas 2013).

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increase in auditor's workload is due to reasons unrelated to the auditor's quality of audits.<sup>2</sup> Non-accounting class action suits are related to misrepresentations of future performance, future earnings or future product viability (for e.g. in case of pharmaceutical companies when a product is at the development stage) which lead to share price temporary increases or decreases.<sup>3</sup> Second, this distraction is exogenous to the other clients of the auditors' portfolio as it is unlikely that the other clients in question can affect decisions on class actions. Third, a SEC's investigation is a non-public information before SEC decides to issue a SEC enforcement action. Hence, audit offices' clients cannot anticipate a distracted auditor and thus decide to switch to a different auditors, or change their internal accounting and management. This eliminates the concern that worst performing companies choose worse auditors.

When an audit-client is investigated by the SEC, the auditor (distracted auditor) of the sued firm is confronted with more work. Specifically, the auditor faces work associated with the accounting standards (AS 2505) but also with SEC staff meetings, testimonies and involvement with the client's dealings with the SEC. We believe that, when an audit office is confronted with more work, its reaction would be to shift away employees and time from some clients, towards the ones they need it. This is because auditors' time and resources are limited. Following this logic, when an audit client is under SEC's investigation, the auditors should shift their attention to the sued client, leaving their other (or some) clients more neglected.

Using this identification strategy, we can observe the change in the audit quality when auditors face increased busyness (i.e. the importance of auditors' time), whilst keeping everything else constant. We posit that a particular group of clients will suffer (more) from the lack of the auditor's attention. In particular, we expect that client firms whose offices are located in a different city (treated group) as compared to the auditor's office city will be (more) affected by the distraction. Commuting to monitor the client will be regarded as a burdensome for

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<sup>2</sup>When we say that the auditor is not responsible for non-accounting related class action suits, we specifically mean that the plaintiff will not name the auditor as the defendant and thus auditors are not involved in the litigation process themselves. However, when an audit client is involved in a litigation process, the auditor needs to comply with the relevant accounting standards (AS 2505). Our purpose is to use these suits as an exogenous shock to auditors' workload that is not related to auditors' quality.

<sup>3</sup>For example, in *Kanefsky v. Honeywell Int'l Inc* class action lawsuit, the plaintiffs are suing the defendant for misleading allegations for asbestos-related liabilities as they were higher than initially alleged. After reading some of the class actions in our sample data, most of them are related to the disclosure of misleading statements.

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an already busy auditor. On the contrary, client firms with offices in the same city (control group) as the auditor's office city will experience milder (if any) consequences.<sup>4</sup> Hence, we use non-accounting class action suits to identify audit offices that face workload imbalance and we check the differences in the audit quality of different- and same-city clients. In our tests, sued clients are deleted. We expect the audit quality of the clients with offices in a different city than the auditor's office city to encounter a (greater) drop in their audit quality as compared to the clients of the same auditor with offices situated in the same city as the auditor office's city.<sup>5</sup> Alternatively, ex-ante we are not aware as to whether a class action lawsuit against an audit client will distract the audit office to such extent that would cause a drop in the audit quality. SEC's investigations are particularly common and one would expect audit offices to be well prepared, trained and ready to cope with such distractions. Further, audit offices that belong to the same national audit firm can exchange staff and allocate resources when one of them is in need (J. R. Francis and M. D. Yu 2009). Travelling and commuting is also a common practice in audit offices, especially in the US. All these would work against us finding a reduction in the quality of audits of the firms that are situated away from auditor's offices when the auditor is distracted.

Our results give support to our expectations. We proxy audit quality using the propensity to restate the financial statements. We show that firms whose offices are situated in a different city as compared to the auditor's office city bear more restatement announcements during the years of distraction. To the contrary, the audit quality of the treated group does not differ from that of the control group in years whereby the audit office is not distracted. Results show that auditors' time is valuable for their client firms as it is one determinant of audit quality. Specifically, different-city clients bear the negative costs of lack of auditors' time as they see a decrease in the audit quality (lack of time results costly for them). We further test whether the audit quality of

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<sup>4</sup>One way of thinking it is that; all clients will be neglected, but the level of negligence is unlikely to be the same for all the clients. Another assumption would be that some clients would be neglected and some not. We proceed into testing both of these arguments to rule out one of the two assumptions.

<sup>5</sup>We consider auditors that audit at least three firms, say firms X Y and Z. Firm Z receives the class action suit and firm X (Y) belongs to the treated (control) group. The lawsuit event, offers an exogenous increase in the audit work related to firm Z which ultimately leaves the auditor distracted towards firm X. We test whether firm Y is also neglected.

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the two groups separately, is affected during the distraction year. We find that the treated firms face more restatement announcements in the distraction years as compared to non-distracted years.<sup>6</sup> Contrary to this, the control group of firms does not suffer any impairment in the audit quality during distracted years as compared to non-distracted years. Further tests show that the treated group of firms pays lower audit fees as compared to the control group during distraction years, evidence of less audit effort towards the treated group of client firms. We also find that, audit offices are less likely to take/gain new clients during distraction years as compared to the time that are not distracted.

A concern arises as to the fact that the distraction happens at the audit-team level rather than the audit-office level. Even though it is true that a distraction event (for e.g. SEC investigation against an audit client) affects directly the audit team who is involved with the audits of that client, the audit office as a whole is the one responsible for allocating resources, dealing with the clients and delivering their audit opinion (J. R. Francis, Stokes, and Anderson 1999). Hence, if an audit team faces extra work, the audit office will have to transfer audit members from other audit teams to the one that is overloaded. In this study we consider the workload of the audit office and not of the audit teams due to data unavailability. Nevertheless, we believe that results will not be biased as the audit office is indirectly affected by the extra work. Another potential concern is that we cannot know the exact distance between client firms and audit offices. Even if a client firm is in a different city, it could still be closer to the audit offices as compared to another firm that is located in the same city. This however, will go against us finding a result. We contribute to the literature relating to audit busyness, workload imbalance and its impact on audit quality. So far, previous studies show that time and resources budget constraints cause a decrease in audit quality for all the audit office's clients during busy seasons only, as auditors are unable to adequately monitor all of their clients. In this study, we show a particular group of clients suffers from this distraction. Specifically, client firms that are situated in a different city compared to the auditor's offices are facing a decline in audit monitoring. We also show that client firms that are situated in the same city as the audit offices' city do not received de-

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<sup>6</sup>For the distracted and non distracted years, we use the same audit offices to avoid comparing audit offices that differ in unobservable characteristics.

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creased attention. Our results hold for longer term and not just during the time the auditor is distracted.

Our study is of interest to the regulators, audit offices, national audit firms but also to their respective clients. Audit firms might invest in human capital so that to be able to absorb distraction shocks without undermining quality. Similarly, clients should be aware of how their relative importance and location can affect the respective quality of their audits. Further, regulators could set standards in such way so that to resolve city-level audit problems.

The rest of the paper proceeds as follows. In the next section, we discuss the related literature and we develop our hypothesis. Section 3 explains in detail our research design, presenting the empirical methods and the variables we use to capture the audit quality. In Section 4 we discuss the main results. Robustness checks are presented in Section 5. Finally, in Section 6 we conclude.

## **2.2 Literature Review and Hypotheses Development**

### **2.2.1 SEC enforcement actions: Procedure and auditor's responsibility:**

A SEC's investigation starts with an informal inquiry after an event had triggered SEC staff's curiosity to initiate such a process. The triggering event may include a whistleblower tip, class action plaintiffs' attorney etc...During the first step of the process, the SEC contacts the company via phone or via letter asking to voluntarily provide all the information necessary to evaluate the situation. Very often, the SEC asks the company to stop the automated destruction of documentation as this could be relevant to the staff's evaluation procedure. The beginning of the process is as crucial as the outcome of the process. The SEC staff will conclude early on whether the company is fully cooperating in the process and can thus be trusted for dealing with the proceedings of the investigation. Hence, the first impression given is the one that prevails all through the process. Thus, it is crucial that everything is correctly done and submitted on time to the SEC so that the company is placed in a good position.

In most of the cases, the informal inquiry is converted to a formal one, without even informing

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the firm about the change in the status. Often enough, the status changes because of the lack of cooperation with the investigating firm or even due to the firm's reluctance in providing the documents previously requested by the SEC at the beginning of the investigation. What is more, SEC can only obtain certain records relating to banks and telephone companies only through a subpoena. Under the formal investigation, the SEC seeks to obtain all relevant documents from the investigating company and from third parties, such as auditors and banks. For example, the SEC asks the auditor for audit work papers, financial data or records and book-keeping documents. It is very probable for auditors to meet with the SEC staff and be involved in client's dealings with the SEC such as preparing documents requested by the SEC. At the same time, during the formal investigation, the plaintiff might decide to testify accompanied by an expert, such as an accounting expert or auditor.<sup>7</sup> Further, SEC might be particularly keen on investigating extensively auditing and accounting related documents because auditors might be viewed as responsible even though this is not true, as they might be regarded as "guilty by association" (Lange, P. M. Lee, and Dai 2011; Donelson, Ege, and Leiby 2019). At the end of the formal investigation, the SEC might decide, more often than not, to issue a formal enforcement action if it believes that a the federal securities law has been violated.

Our sample data involves non-accounting class action suits at the time the wrongdoing incurred, before it becomes known by the public, i.e. during informal and formal SEC investigation. All of the suits included in the final sample result to a SEC enforcement action.

Auditors also need to comply with the accounting standards (AS 2505) when performing the audits of a company that is in the litigation process. In particular, the independent auditor should contact the management to discuss the procedures concerning litigation and claims, and also to be reassured, in writing, that the management has disclosed all the information asked by the lawyers of the investigating company. Even though an auditor cannot make a legal assessment on the situation, he/she is responsible for disclosing litigation related information. For example, the auditor could read the meetings of stockholders, directors, board and

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<sup>7</sup>Further information can be found in the speech of Andrew Ceresney, director of the SEC's enforcement division: <https://www.sec.gov/news/speech/ceresney-enforcement-focus-on-auditors-and-auditing.html> and in the SEC's official webpage in the following link: <https://www.sec.gov/divisions/enforce/enforcementmanual.pdf>

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audit committees.

In summary, the auditor should be involved in the litigation process, pay specific attention to the SEC's and lawyer's demands, make sure that is up to date in case of a change in the client's lawyer and communicate constantly with the manager and the lawyer reassuring both parties that all the necessary information and work is done.

## 2.2.2 Audit Office and Audit Quality

Even though a vast amount of research focuses at the national audit firm-level, literature on audit-offices provides evidence of an association between audit quality and certain audit office's characteristics. For example, when the audit-client is large as compared to the audit-office, then auditors become more conservative (Reynolds and J. R. Francis 2000). Similarly, C. Li 2009 finds that audit offices are more likely to issue going concern opinions to important clients that pay higher audit fees as compared to the audit-office's total audit fees. Industry specific expertise is also valued and priced resulting to a fee premium to the corresponding audit offices (Ferguson, J. R. Francis, and Stokes 2003, J. R. Francis, Mehta, and W. Zhao 2017).

An audit office is responsible for delivering audits to multiple clients at the same time. An audit failure within an audit office in a particular year, may demonstrate that either one audit engagement suffers from poor audit quality or that there is a more systematic failure across the audit office. J. R. Francis and Michas 2013 introduce the concept of contagion effect, suggesting that audit clients of a particular audit office tend to receive similar audit quality. They find that if at least one client faces an audit failure, as measured by downward restatement of earnings, other clients of the same audit office also experience a drop in their audit quality.

Chaney and Philipich 2002 find that after the Enron scandal, other Arthur Andersen's clients experienced a negative market reaction. The effect was even more severe for the Houston's office clients which was the audit office responsible for Enron's audits. Similarly krishnan2005did analyzes the audit quality at audit-office level. The author finds that clients of Arthur Andersen company at the Houston office present less timely reporting of bad news as compared to other Houston office clients audited by other Big 6 auditors.

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Further literature analyzes the audit quality delivered by Big 4 audit offices. In particular, large audit offices, as proxied by Big 4 offices, tend to issue more going concern opinions and their clients are discouraged from engaging in opportunistic earnings management. The reason is that large audit offices will have more human capital in office and better in-house experience when dealing with public companies francis2009big.

### **2.2.3 Workload and the Impact on Audit Quality**

The auditing profession is characterized by strict deadlines, heavy workloads, and pressures where auditors are often required to operate with limited time and resources. In particular, during busy audit seasons, auditors have to complete a set of audit engagements for all the clients they have in their portfolio, within limited time lopez2012effect. Psychology theory, known as the Yerkes-Dodson Law, suggests that workload imbalance and performance have an inverted-U shaped relationship yerkes1908relation. At the beginning, as stress and arousal increase, the rate of learning (and thus performance) is stimulated, but when arousal exceeds the optimal level, performance starts suffering.

This has drawn considerable attention in the auditing environment after Rhode 1978 identified that more than 50% of the surveyed auditors admitted compromising quality due to time pressures. Stressing on this, the Public Company Accounting Oversight Board (PCAOB) highlights its concern on whether auditors can adequately monitor and offer high quality of audits (PCAOB) 2012a. In accordance to this Heo, Kwon, and Tan 2020 find that during busy seasons, auditors supply lower quality of audits as proxied by misstatements and discretionary abnormal accruals. In particular, during busy seasons, auditors experience excessive stress and anxiety which eventually cause performance to deteriorate (coram2004effect ; heo2020auditors; kelley1990impact). Time constraints might cause an auditor to deliver substandard work allowing managers therefore to engage in opportunistic earnings behaviour Caramanis and Lennox 2008 and to meet or beat earnings benchmarks lopez2012effect. Exploiting a SEC rule that caused a reduction in the number of days available to file quarterly or annual reports , Lambert et al. 2017 find that time limits are associated with lower audit quality.

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Experimental research has shown that, when time constraints are present, auditors choose to reduce the number of tests they perform for a particular client taking final decisions based on fewer testings (Asare, Gregory M Trompeter, and A. M. Wright 2000; Houston 1999) reducing therefore effectiveness (McDaniel 1990).

## 2.2.4 Hypothesis Development

Following the rationale in the literature that focuses on work imbalance in the auditing profession, we hypothesize that, when an auditor faces a routine shock that increases workload, ultimately performance suffers. This pinpoints that auditors' time is indeed valuable for their clients. To test this, we consider a shock to the auditors' time and resources when a particular client receives a non-accounting related class action suit.<sup>8</sup> When a client firm is sued, then auditors would have to turn their attention to the firm that provokes the distraction (i.e the sued firm) leaving some or all of their other clients exposed to lower attention. Audit offices are often imposed time budgets and strict deadlines that ultimately cause a reduction in the number of testings and thus performance. Hence, we believe that the auditors that encounter a distraction would be forced to allocate more time to the sued firm, which consequently leaves less time available to allocate to their other clients in question.

However, it is almost impossible to believe that an audit office would allocate equal amount and resources to all their clients. There would be clients that would be (more) affected from this distraction as compared to other clients. This idea posits a variation within the same audit-office and thus a variation in the relevance of time for the different clients that belong to the same portfolio. To capture this, we partition our sample between audit-client firms of the same distracted audit office that would be more or less distracted by the lawsuit event. We thus partition our sample into client firms whose offices are located in the same city as the audit office city and into clients whose offices are situated in the same city as the audit office's city.

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<sup>8</sup>We recognize that auditors are mostly distracted and need to dedicate more time and allocate more resources when they deal with accounting related class actions. However, such actions affect audit quality as well, even though the auditor is not named as defendant. Untabulated analysis though, is showing that the results are similar when we use accounting related class action suits.

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Auditors, during their audit engagements, need to meet their clients in their offices and talk with management and employees in person. This creates a more successful engagement and communication, as in-person meetings are more effective and efficient for complex tasks and work.<sup>9</sup> Hence, if an already busy and distracted auditor should also commute as an additional task on top of everything else he/she had to do, then it is very likely that firms located in a different city to suffer (more) from the distraction event as clients that are situated in the same city as the audit-office city. Our prediction does not include what the actual change in the audit quality of the same-city clients will be during distraction. We examine this in our further tests but we make no prediction on that. The argument leads us to formulate our prediction:

***Hypothesis 1:** Audit-client firms of a distracted auditor that are located in a different city than the audit-office city will receive lower quality of audits during distraction compared to client firms whose offices are in the same city as the auditor's offices.*

## 2.3 Sample Selection and Research Design

In order to test the prediction developed in section 2, we use a panel data set of US firms covering the years 2000 to 2019. We obtain data on misstated financial statements from Audit Analytics. We start our sample period from 2000 as it is the first year data are available in Audit Analytics. We also obtain firm related characteristics from Compustat database. As a distracting event to the auditor's work we use non-accounting class actions that are investigated by the SEC against a client firm. We start with 6113 unique class actions investigated by SEC from 2000 to 2019 since in 2000 Audit Analytics starts the coverage of lawsuits against companies. We keep companies that had an identified company code. We then delete cases of financial and utility firms, cases with accounting irregularities and cases whereby the auditor is named as the defendant. We also delete Big 4 audit offices whereby more than one office is situated in the

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<sup>9</sup>After a phone call conversation with a senior auditor in Deloitte, London; we understand that commuting depends on the industry the client operates in. In general, financial services are situated in big cities close to audit offices. However, manufacturing and other industries could be situated anywhere in a country and thus auditors should be prepared to travel a lot.

same city. This is because, we cannot identify the clients that are allocated to different audit offices of the same national firm and situated in the same city.<sup>10</sup> After merging with Compustat to collect firm-level characteristics, we are left with 2035 unique non-accounting class actions. As a distraction year, we consider the year that the SEC starts its investigation. This information is only available for class action suits and this is the reason why we include only non-accounting class action suits and not any other non-accounting lawsuit. We eventually drop all firms that received a non-accounting class-action suit as we are interested in the subsequent audit quality of the other clients of the distracted audit office. We just use the non-accounting class actions to identify distracted audit offices. We then use this dataset to estimate our main regression model:

$$Pr(\text{Restatement} = 1)_{i,t+1} = f(\beta_{0,t} + \beta_{i,1}\text{Treated}_{i,t} + \beta_{i,2}\text{Controls}_{i,t} + \alpha_t + \gamma_{\text{industry}} + \epsilon_{i,t}) \quad (2.1)$$

Our main dependent variable ( $\text{Restatement}_{i,t+1}$ )<sup>11</sup> takes the value of one if the year-end financial statements are restated, and zero otherwise. We believe this proxy is appropriate because it measures corrections on GAAP violations or errors, capturing therefore actual audit quality (DeFond and Jieying Zhang 2014). It is also significantly associated with the measurements used by auditors and regulators to assess audit process deficiencies (Aobdia 2019). We drop from our sample (i) merger related corrections, (ii) restatements due to changes in the accounting principles and (iii) restatements associated with revisions for comparability.

The drop in the audit quality could be evident then from year  $t$ ,  $t+1$  or even up to  $t+5$ . For that, we check the probability of restatement announcements in longer periods and not only in year  $t$ .

**Treated and Control Group:** The audit quality of an audit office could challenge our results. Thus, if we compare audit clients of offices that receive a distraction event and audit clients of offices that do not face such a distraction we might attribute results to alternative explana-

<sup>10</sup>Appendix B shows the Big 4 audit offices that are situated in the same city and belong to the same national firm.

<sup>11</sup>In further robustness check we also use the unsigned discretionary accruals and internal control material weaknesses as additional proxies of audit quality. We use restatements in our main analysis as we believe they have better explanatory power and are associated with proxies used in business practice (Aobdia 2019)

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tions associated with audit quality. In an attempt to tackle this concern, our treated and control group include clients of the same audit office. This ensures that audit-related characteristics, such as reputation effects or talent, remain unchanged between the treated and control groups ultimately capturing variations within the portfolio of the same audit office. This helps us to rule out alternative explanations such as differences between the two groups.

When an auditor is distracted, it has less time available than before for his clients. However, even though this is true for all of his clients, some of them will suffer more from this distraction. If the auditor needs to commute to reach the client's office, then it is likely that this client is (more) ignored as compared to a client that is located in the same city as the auditor.

Our treated group is defined as the one who is more likely to have the audit quality impaired as a result of auditor's extra workload. We follow Dou and E. J. Zhang 2018 and we consider as treated group audit clients that have their offices in a different city than the distracted auditor's city. Similarly, our control group are the clients of the distracted audit office that have their offices in the same city as the auditor's. The location of a firm office does not affect similarity of the two groups. This is because, the location of a firm neither affects the quality of the firm nor is influenced by the distraction event.

"Controls" denotes a set of control variables to account for client-firm and audit-office characteristics that may have an impact on the incidence of misstatements. Following Choi et al. 2010 and J. R. Francis and M. D. Yu 2009 we include audit office characteristics such as office size, riskiness of the portfolio of audit clients. We also use firm control variables following J. R. Francis and M. D. Yu 2009 and Lennox and B. Li 2014. All continuous variables are winsorized at the bottom 1% and top 99% percentiles of the distribution. A complete list of all the variables used in this analysis can be found in appendix A. A concern may arise as to the fact that some auditing firms may have more than one office in the same city. By not taking into account this we contaminate our results as we allocate clients to incorrect audit offices. This is more common among the Big 4 offices. To alleviate the problem, we collect information on the Big 4 audit firms and their audit offices across the US. We then delete all observations of Big 4 firms

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that appear to have more than one office in the same city<sup>12</sup>. Finally, we include year fixed effects to account for shocks that may affect restatements similarly within a specific year ( $\alpha_t$ ) and 2-digit SIC industry fixed effects ( $\gamma_{industry,t}$ ) to capture factors that are common within a specific industry. Standard errors are clustered at the client-firm level.

In the regression analysis, the firm that receives the SEC enforcement action is not included as this could bias our results.

## 2.4 Results

### 2.4.1 Summary Statistics and Correlations

Table 1, panel A, provides the summary statistics for the sample used in our models, that is, all client firms whose auditor has at least one client that received a non-accounting class action lawsuit, one that belongs in the treated group and one in the control group. The table shows that overall, our sample consists of small firms that, on average, have high returns but low performance. More than half of our sample is audited by a Big 4 auditor and in general, distracted audit offices tend to be large in size. On average, a fifth of the audit offices in our sample are regarded as city industry experts and are responsible for auditing 37 clients yearly with the maximum number reaching 106 clients. The incidence of restatements is 8.5% complying with previous literature (Lennox and B. Li 2014). Panel B shows the summary statistics after splitting the sample into treated and control group of firms, i.e. firms whose offices are situated in a different or the same city as compared to the auditors' office city. Even though the method of splitting the sample should not cause any statistically significant at the firm and audit-office level characteristics of the two group of firms, panel B shows that treated and control firms differ in many observable characteristics. To rule out the possibility that our results would be affected by these differences, we use entropy balancing method as a robustness check.

Table 2 shows the correlations between our main dependent variables, restatements and absolute value of discretionary accruals, and control variables. The left down corner shows the

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<sup>12</sup>All Big 4 audit firms that have more than one audit office in the same city can be found in appendix B.

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Pearson correlation coefficients and the right up corner the Spearman correlations.

## 2.4.2 The effect of distraction event on Restatements

Our analysis is based on the assumption that a distracted audit office has now less resources and time to allocate to its client-firms that are not sued. However, naturally thinking, an audit office cannot allocate equal amount of time and resources to all its clients as some would suffer more or less by the distraction event. One way of testing this variation within the portfolio of clients of the distracted audit office is by separating the sample depending on the city client's offices are situated. To test our hypothesis we run equation (3.3). Table 3 shows the results. Columns (1) - (2) show the effect on the treated group during distraction years. We see that client firms who have their offices in a different city compared to the auditor office city, tend to face more restatements as compared to their counterparts for up to three years following the distraction event. This is consistent with our prediction indicating that audit offices that are dealing with a sued client have less time and resources available to allocate to all their client firms and thus tend to make more mistakes, both material and immaterial, when their clients are located in a different city. The fact that they need to commute makes the time even more limited leading them to more mistakes. The variable  $Restatement_{t+1}$  is positive and significant which implies strong persistence on misstatements, as it is shown in previous literature (Lennox and B. Li 2014). Hence firms that tend to restate in year  $t-1$  are more likely to also restate in year  $t$ . In columns (3) -(4) we test the difference in the propensity to restate between treated and control group of firms for the same audit offices used in column (1) and (2), but in years whereby they are not distracted. We see that there is no difference in the propensity to restate between these two groups when the auditor does not face this workload imbalance. In column (5) we use a diff-in-diff analysis to confirm the results. Indeed, the treated group of firms restates more as compared to the control group in the years of the distraction as opposed to years of no distraction event. Overall, our results indicate that lack of time results costly to some clients that bear a drop in the audit quality they receive. This intuitively suggests that auditors' time

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is valuable when contracting with clients.

#### **2.4.2.1 Are all clients ignored?**

Our prediction assumes that some audit offices will be (more) ignored as compared to other offices. Ex post, we are not certain as to the fact that all, or some will suffer from this distraction. For that, we separate the sample into the firms that are treated in distraction years as compared to non distraction years in Table 4, columns (1) and (2). Similarly, in columns (3) and (4) we present the results for the control group of firms. We see that during distraction years, the treated group of firms are more probable to restate as compared to non-distraction years. However, the control group of firms seems to receive equal amount of attention from the auditors in distraction and non distraction years. This is an indication that only some clients suffer from this distraction and not all clients.

## **2.5 Robustness Checks**

### **2.5.1 Audit Fees paid by the cilents**

Results are indicating that auditors allocate less time and resources available for the clients that are situated in a different city, when they are distracted. Hence, it will be naturally to think then that, if auditors are exerting less effort to that particular group of clients, consequently, these clients should pay lower audit fees (Caramanis and Lennox 2008; Simunic 1980). Table 5 tests this prediction. The dependent variable is the natural logarithm of audit fees. The treated group of firms pays lower audit fees as compared to the control group during distraction years. However, this discrepancy in the audit fees paid by the two groups is no longer evident when the audit offices are not distracted.

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## 2.5.2 Willingness (or ability) of gaining new clients

If auditors experience workload imbalance and pressure when a client of theirs receives a non-accounting class action, then they should be reluctant to undertake the audits of any new client. In Table 6, we see that audit offices are less likely to gain a new client when they are distracted as compared to non distraction years. A limitation of this test, is that we cannot distinguish on whether it is auditors' reluctance of contracting with more clients due to busyness or the potential clients themselves choose not to contract with the auditors. Nevertheless, the end result is that during distraction years, auditors are less likely to contract with a new client which reinforces our main prediction.

## 2.5.3 Entropy balancing method

As it is observed in table 1, panel B, the treated and control group of firms differ in several observable characteristics. To ensure that our results are not driven by these differences, we proceed to an entropy balancing method (Hainmueller 2012). The entropy method is very similar to the propensity score matching method with the advantage that it assigns weights in such a way that it achieves an identical treated and control group in terms of mean, variance and possibly higher-order moments. To implement the entropy method, we choose the observable characteristics that are statistically different in the treated and control group of firms in Table 1, panel B. Table 7 shows that our entropy method is successful since the two groups have identical mean and variance. In Table 8, we then check whether the main results still hold after applying entropy method. We see that the coefficient of the Treated variable is positive and statistically significant ensuring that our results are not biased by the difference in the observable characteristics.

## 2.5.4 Capacity Constraint effect

Due to its nature, the consequences of such a distraction event should be more evident in small audit offices as compared to big offices. Big offices, have more resources and more employees

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to deal with budget and time constraints as they have "greater capacity and staffing flexibility to absorb shocks" (J. R. Francis, Mehta, and W. Zhao 2017, p.1963) To check this, we partition our sample into quartiles based on the yearly total fees an audit office earns, with quartile 1 being the lowest audit fees and quartile 4 the highest amount of audit fees. We follow J. R. Francis, Mehta, and W. Zhao 2017 and we define as big offices those that belong in quartile 4 and the rest are said to be small offices. Table 9 shows the results. Indeed, big size offices are more capable in absorbing the time and resource constraints as it is shown by an insignificant coefficient of the Treated variable. However, small size offices do not have the capacity in taking this shocks without any consequences. Their audit quality is dropped as we see by a positive and significant Treated variable coefficient. Untabulated analysis indicates that during non distracted years, the difference in the propensity to restate in the treated and control group of firms is statistically insignificant.

### **2.5.5 Alternative measurement of audit quality**

### **2.5.6 Discretionary Accruals**

In our main analysis we use restatements as our main measure of audit quality. To double check the results, we also use the discretionary accruals measure as calculated by the modified Jones model (1991). Consistent with our results, treated firms experience more earnings management activities in the year of the distraction event (Table 10).

### **2.5.7 Internal Control Weaknesses**

As an alternative proxy of audit quality, we use the material weaknesses of internal control (ICMW). According to the PCAOB, No 2004 the existence of a material internal control weakness "results in more than a remote likelihood of a misstatement of the company's annual or interim financial statements that is more than inconsequential will not be prevented or detected". We use IC\_Weakness as a dummy variable that takes the value of one if the company receives a ICMW, and zero otherwise. We also use the continues measurement (Number of weaknesses)

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that counts the number of ICMW. Results are presented in Table 11. The first two columns take into account audit offices during distraction years and columns (3) and (4) show the results for the same audit offices in non-distracted years. Evidence complies with previous results. The treated group of firms is more likely to receive an ICMW as compared to the control group of firms. The result holds when we use the continuous measure.

### **2.5.8 Sued firms and attention paid**

Our tests and analysis are based on the assumption that the an audit office with a client that receives a non-accounting related class action suit should shift away resources and time from its other clients, towards the one that is sued. If indeed the audit office is spending more time on the audit engagement with the sued client, then this specific client should pay higher audit fees as compared to the other clients. To test this assumption, we check whether the clients that received a non-accounting class action lawsuit pay higher audit fees as compared to the non-sued clients. We see in Table 12 that sued clients pay higher audit fees indicating that the audit office is spending more time and attention to those clients.

## **2.6 Conclusion**

Can auditors' time be a determinant of audit quality? This study examines whether auditors' time availability are valuable. Literature suggests that auditors deliver lower quality of audits during busy seasons. Clients that belong to the same portfolio of audit office tend to receive similar audit quality according to the literature. We contribute to the broader literature in this study, by testing the importance of auditors' time. To do this, we exploit a shock that increases auditors workload, is not related to auditors' quality and is exogenous to the other audit client-firms.

Specifically, we use non accounting class action suits as a shock to the auditor's attention. We believe that auditors with a sued client, will turn their attention to that specific client leaving some or all other clients with less resources and time available. However, it is fairly unlikely,

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that auditors will treat all other clients similarly. We believe that, if an auditor has to commute to reach client's offices (client has offices in a different city than the auditor's office city), he/she will have even less time to apportion to that specific client as compared to clients that have their offices in the same city as the auditor's office city.

To test our prediction, we split auditors' clients to the ones that have their offices in a different city (treated) as compared to the auditors' office city and to the ones that have their offices in the same city. For our strategy, we eliminate all clients that received a lawsuit to avoid contaminating our results.

Results show that client firms that have their offices in a different city, face more restatement announcements during the distraction years (i.e. during the years that a client receives the non accounting class action suit). We also find that only different-city clients suffer from this indicating that the lack of auditors' time can be costly for that particular group of clients. We also check the audit quality of these audit offices during non distraction years. We see that neither different-city nor same-city client suffer a decrease in the quality of audits when the audit office is not distracted.

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## Appendix A: Variables Definitions

Variables	Definition	Data source
<b>Dependent Variables:</b>		
<b>Restatements</b>	Dummy variable that takes the value of one if the year-end financial statements are restated and zero otherwise.	Audit Analytics
<b>ABS(DA) Jones</b>	The absolute value of discretionary accruals calculated using the modified Jones model (1991) as modified by Kothari et al. (2005).	Compustat
<b>IC_Weakness</b>	Dummy variable that takes the value of one if the company receives an internal control material weakness, and zero otherwise.	Audit Analytics
<b>Number of weaknesses</b>	Continuous variable that counts the number of internal control material weakness a company receives.	Audit Analytics
<b>Test Variable:</b>		
<b>Treated</b>	Dummy variable that takes the value of one if the client-firm's offices are situated in a different city than the auditor's office city and zero otherwise.	Audit Analytics
<b>Firm-Level Controls:</b>		
<b>BM</b>	Book Value of equity divided by the equity value of equity.	Compustat
<b>Size</b>	Natural log of total assets.	Compustat

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<b>Loss</b>	Dummy variable that takes the value of one if the company had a net Loss in the particular year, and zero otherwise.	Compustat
<b>Sales Growth</b>	Percentage growth in company's sales from year t-1 to year t.	Compustat
<b>PPE Growth</b>	Percentage growth in company's net property, plant and equipment from year t-1 to year t.	Compustat
<b>Leverage</b>	Total debt divided by total equity.	Osiris
<b>Asset Growth</b>	The year change of total assets.	Osiris
<b>Foreign</b>	Dummy variable that takes the value of one if the company has foreign activities and zero otherwise	Compustat
<b>Liquidity</b>	Current assets scaled by current liabilities	Compustat
<b>Return</b>	Percentage change in company's share price from year t-1 to year t.	Compustat
<b>ROA</b>	Net income scaled by total assets.	Compustat
<b>Bankruptcy</b>	Probability of bankruptcy using the Altman Z score $[(0.717 \times \text{net working capital/assets}) + (0.847 \times \text{retained earnings/assets}) + (3.107 \times \text{earnings before interest and taxes/assets}) + (0.42 \times \text{book value of equity/liabilities}) + (0.998 \times \text{sales/assets})]$ (Altman, 1983)	Compustat
<b>CFO</b>	Cash Flow from Operations scaled by lagged total assets.	Compustat
<b>M&amp;A</b>	Dummy variable that takes the value of one if the company is engaged in a M&A and zero otherwise.	Compustat
<b>Big4</b>	Dummy variable that takes the value of one if the company is audited by a Big-4 auditing company and zero otherwise.	Compustat

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<b>f_month</b>	Dummy variable that takes the value of one if company's fiscal year end, ends in december and zero otherwise.	Compustat
<b>Ln (Audit Fees)</b>	Natural log of the dollar amount of the audit fees a company pays to the auditors.	Audit Analytics
<b>Ln (Non Audit Fees)</b>	Natural log of the dollar amount of the non audit fees a company pays to the auditors.	Audit Analytics
<b>Tenure</b>	Difference between the date an auditor was appointed in the company and the date the auditor left the office. The we construct a dummy variable taking the value of 1 if the difference is above or equal to 3, and zero otherwise.	Audit Analytics
<b>Litigate</b>	Dummy variable that takes the value of one if the company operates in the following SIC codes: 2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370, and zero otherwise	Compustat
<b>City_Industry_Expert</b>	Dummy variable that takes the value of one if the company's auditor is the city industry leader and zero otherwise. The audit firm with the highest amount of audit fees within an industry and city-year is classified as the city industry expert. City is defined by Audit Analytics	Audit Analytics
<b>Auditor Office-Level Controls:</b>		
<b>Office Size</b>	Natural log of the total dollar amount of audit fees charged to all the clients in the portfolio within an auditor office. Audit Office locations are derived by Audit Analytics	Audit Analytics

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**Influence**

Audit fees plus non-audit fees charged to a specific client, scaled by total audit fees charged by the auditor office.

Audit Analytics

**Clients**

Number of clients audited by the auditor office.

Audit Analytics

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## **Appendix B: Multiple Big 4 offices across US:**

### **1. KPMG:**

- Atlanta
- Dallas
- Denver
- Knoxville
- Montvale
- New York
- Phoenix
- San Diego

### **2. Deloitte:**

- Deloitte
- San Francisco
- Washington
- Lake Mary
- Baltimore
- Austin

### **3. Ernst & Young:**

- San Francisco
- San Jose
- Washington
- Jacksonville
- New Jersey

- 
- New York
  - Dallas
  - San Antonio
  - Seattle

#### 4. **Pricewaterhouse Coopers:**

- Los Angeles
- Tampa
- Chicago
- New York

Table 2.1: Summary Statistics

Panel A: Summary statistics

	Obs	mean	sd	min	e(p25)	e(p50)	e(p75)	max
MB	6014	2.997	6.458	-25.312	1.134	2.039	3.654	41.495
Restatement	5380	0.085	0.279	0.000	0.000	0.000	0.000	1.000
Abs DA	5025	0.210	0.407	0.002	0.049	0.115	0.243	6.902
Size	6429	6.083	2.190	0.563	4.595	6.032	7.577	11.197
Loss	6417	0.437	0.496	0.000	0.000	0.000	1.000	1.000
Sales Growth	5834	0.185	0.659	-0.838	-0.038	0.079	0.232	4.918
PPE Growth	5990	0.156	0.662	-0.750	-0.090	0.025	0.193	4.470
Leverage	5813	0.233	0.307	0.000	0.000	0.135	0.343	1.632
Foreign	6457	0.474	0.499	0.000	0.000	0.000	1.000	1.000
Liquidity	6306	3.175	3.441	0.171	1.289	2.070	3.535	21.085
Return	5492	0.089	0.870	-0.888	-0.362	-0.051	0.269	5.980
ROA	6418	-0.130	0.458	-2.930	-0.130	0.016	0.064	0.312
Bankruptcy	6152	0.726	5.091	-32.485	0.547	1.622	2.765	8.409
CFO	6045	0.000	0.322	-2.019	-0.014	0.072	0.139	0.499
M&A	6457	0.121	0.326	0.000	0.000	0.000	0.000	1.000
Litigate	6457	0.431	0.495	0.000	0.000	0.000	1.000	1.000
BIG4	6457	0.602	0.490	0.000	0.000	1.000	1.000	1.000
Fiscal month	6457	0.735	0.441	0.000	0.000	1.000	1.000	1.000
Ln (Audit Fees)	6445	13.541	1.366	10.488	12.537	13.584	14.461	16.806
Ln (Non Audit Fees)	5807	12.054	1.807	7.496	10.897	12.107	13.269	16.098
Tenure	6394	14.706	16.647	0.000	4.000	10.000	18.000	129.000
Influence	6457	0.056	0.097	0.001	0.009	0.022	0.057	0.709
Clients	6457	37.697	24.252	3.000	19.000	32.000	51.000	106.000
City_Industry_expert	6450	0.222	0.416	0.000	0.000	0.000	0.000	1.000
Office Size	6457	17.617	1.222	13.405	16.912	17.823	18.721	19.209
Litigate	6457	0.431	0.495	0.000	0.000	0.000	1.000	1.000

Panel B: Summary statistics of Treated and Control firms

	Treated			Control			Diff:
	Obs	mean	sd	Obs	mean	sd	
MB	4073	2.980	6.382	1928	3.032	6.636	-0.052
Restatement	3563	0.088	0.283	1806	0.080	0.272	0.007
Abs DA	3426	0.226	0.438	1590	0.178	0.329	0.048***
Size	4346	5.840	2.176	2070	6.601	2.135	-0.760***
Loss	4339	0.463	0.499	2065	0.384	0.486	0.079***
Sales Growth	3914	0.188	0.670	1907	0.180	0.637	0.007
PPE Growth	4043	0.159	0.684	1934	0.150	0.612	0.009
Leverage	3941	0.220	0.301	1859	0.261	0.318	-0.041***
Foreign	4371	0.480	0.500	2073	0.460	0.498	0.021
Liquidity	4266	3.404	3.694	2027	2.680	2.775	0.723***
Return	3717	0.093	0.898	1764	0.080	0.810	0.013
ROA	4340	-0.151	0.484	2065	-0.088	0.397	-0.062***
Bankruptcy	4186	0.593	5.434	1953	0.994	4.264	-0.401***
CFO	4077	-0.021	0.347	1955	0.045	0.259	-0.066***
M&A	4371	0.467	0.499	2073	0.356	0.479	0.111**
Litigate	4371	0.115	0.319	2073	0.133	0.340	-0.018***
BIG4	4371	0.610	0.488	2073	0.581	0.493	0.029**
Fiscal month	4371	0.721	0.448	2073	0.764	0.425	-0.042***
Ln (Audit Fees)	4360	13.431	1.367	2072	13.772	1.338	-0.341***
Ln (Non Audit Fees)	3920	11.968	1.797	1874	12.246	1.810	-0.277***
Tenure	4320	13.836	15.690	2061	16.578	18.391	-2.742***
Influence	4371	0.053	0.095	2073	0.062	0.100	-0.008***
Clients	4371	39.519	25.308	2073	33.691	21.213	5.828***
City_Industry_expert	4364	0.212	0.409	2073	0.244	0.430	-0.032***
Office Size	4371	17.572	1.233	2073	17.706	1.192	-0.134***
Litigate	4371	0.467	0.499	2073	0.356	0.479	0.111***

This table provides summary statistics for all the variables used in this analysis. "Restatement" is a dummy variable that takes the value of one if the year-end financial statements are restated and zero otherwise. In panel A, we show the statistics of all the variables and in panel B, we split the sample between the treated and control group of firms. All variables are winsorized at the top and bottom percentiles of the distribution. All variables are as defined in Appendix A.

Table 2.2: Pearson (Spearman) Correlations left (right) Corner

(1) MB	1	0.077	-0.173	0.221	0.173	-0.113	0.132	0.085	0.306	0.276	0.039	0.253	0.026	0.117	0.045	-0.006	0.123	0.093	0.143	0.040	0.066	-0.039	0.097	0.117	-0.027	-0.008
(2) Size	0.003	1	-0.342	0.018	0.160	0.400	0.397	-0.307	0.069	0.342	0.074	0.369	0.219	-0.187	0.103	0.011	0.810	0.656	0.471	0.497	-0.023	0.312	0.341	-0.187	0.017	-0.131
(3) Loss	-0.035	-0.395	1	-0.168	-0.216	-0.051	-0.189	0.067	-0.273	-0.842	-0.474	-0.631	-0.069	0.167	-0.062	0.086	-0.269	-0.219	-0.246	-0.142	0.090	-0.093	-0.127	0.167	-0.003	0.078
(4) Sales Growth	0.085	-0.083	0.036	1	0.388	0.007	0.020	0.040	0.158	0.209	0.096	0.180	0.101	0.030	-0.036	0.023	0.043	-0.033	0.017	-0.050	0.042	-0.043	0.088	0.030	0.039	0.029
(5) PPE Growth	0.072	-0.005	-0.007	0.289	1	0.093	0.050	0.022	0.041	0.243	0.155	0.242	0.132	-0.037	-0.010	0.011	0.112	0.064	0.096	0.065	-0.028	0.016	0.044	-0.037	-0.004	-0.025
(6) Leverage	-0.055	0.186	0.010	0.065	0.132	1	0.002	-0.395	0.006	-0.008	-0.335	0.024	0.136	-0.261	-0.043	0.099	0.261	0.227	0.118	0.257	-0.153	0.184	0.007	-0.261	0.017	-0.012
(7) Foreign	0.027	0.304	-0.176	-0.032	-0.017	-0.083	1	0.005	0.074	0.223	0.097	0.202	0.163	0.020	0.138	-0.076	0.509	0.369	0.209	0.265	0.082	0.054	0.262	0.020	0.014	-0.020
(8) Liquidity	0.033	-0.246	0.154	0.090	0.110	-0.232	-0.084	1	0.018	-0.011	0.311	-0.107	-0.040	0.221	0.051	-0.086	-0.262	-0.216	-0.052	-0.309	0.198	-0.196	0.018	0.221	-0.058	0.036
(9) Return	0.105	-0.038	-0.111	0.095	0.015	0.069	0.006	-0.006	1	0.295	0.149	0.227	0.018	-0.056	0.047	-0.048	0.082	0.031	0.085	-0.048	0.030	-0.017	0.127	-0.056	-0.005	-0.021
(10) ROA	0.037	0.459	-0.506	-0.046	0.035	-0.036	0.219	-0.015	0.093	1	0.573	0.748	0.043	-0.133	0.080	-0.112	0.283	0.221	0.265	0.128	-0.075	0.077	0.152	-0.133	-0.023	-0.050
(11) Bankruptcy	0.028	0.384	-0.358	-0.038	0.074	-0.178	0.168	0.212	0.028	0.764	1	0.492	-0.017	-0.080	0.080	-0.200	0.018	0.059	0.105	-0.031	-0.013	0.038	0.038	-0.080	-0.028	-0.106
(12) CFO	0.008	0.437	-0.467	-0.113	-0.082	-0.062	0.201	-0.167	0.007	0.684	0.595	1	0.084	-0.090	0.081	-0.085	0.280	0.239	0.249	0.148	-0.082	0.063	0.131	-0.090	-0.037	-0.113
(13) M&A	0.022	0.212	-0.064	0.028	0.060	0.112	0.156	-0.069	-0.018	0.086	0.064	0.092	1	0.020	0.000	0.033	0.241	0.171	0.078	0.135	-0.051	0.039	0.111	0.020	-0.024	0.002
(14) Litigate	0.058	-0.224	0.191	0.047	0.032	-0.219	0.063	0.213	-0.024	-0.173	-0.113	-0.145	0.004	1	0.019	-0.096	-0.135	-0.086	-0.057	-0.111	0.144	-0.146	-0.004	1.000	-0.010	0.040
(15) BIC4	0.004	0.147	-0.058	-0.054	-0.018	-0.046	0.078	-0.004	-0.004	0.098	0.112	0.112	0.004	0.000	1	-0.027	0.117	0.096	0.078	-0.115	0.134	-0.016	0.204	0.019	0.049	-0.018
(16) Fiscal month	0.013	0.013	0.075	0.059	0.049	0.102	-0.083	0.032	-0.016	-0.043	-0.058	-0.077	0.011	-0.084	-0.016	1	0.042	-0.060	-0.008	0.008	-0.040	0.009	-0.001	-0.096	-0.025	0.037
(17) Ln (Audit Fees)	0.027	0.799	-0.277	-0.053	-0.014	0.112	0.424	-0.275	-0.025	0.305	0.205	0.299	0.254	-0.131	0.150	-0.006	1	0.565	0.397	0.488	-0.010	0.313	0.489	-0.135	0.041	-0.061
(18) Ln (non Audit Fees)	0.017	0.624	-0.224	-0.099	-0.030	0.100	0.302	-0.205	-0.037	0.209	0.183	0.269	0.149	-0.104	0.104	-0.045	0.542	1	0.345	0.512	0.090	0.214	0.219	-0.086	0.010	-0.067
(19) Tenure	0.039	0.435	-0.246	-0.067	-0.054	0.010	0.176	-0.125	-0.015	0.185	0.133	0.168	0.056	-0.110	0.072	-0.032	0.360	0.298	1	0.195	0.035	0.156	0.210	-0.057	-0.034	-0.075
(20) Influence	0.011	0.359	-0.070	-0.047	-0.012	0.069	0.113	-0.158	-0.038	0.055	0.041	0.082	0.084	-0.077	-0.038	0.004	0.361	0.414	0.193	1	-0.532	0.391	-0.426	-0.111	0.025	0.021
(21) Clients	0.021	-0.055	0.086	0.031	-0.012	-0.128	0.099	0.157	0.032	-0.001	0.028	-0.022	-0.058	0.159	0.198	-0.033	-0.042	0.037	-0.014	-0.302	1	-0.229	0.598	0.144	0.007	-0.075
(22) City_Industry_expert	-0.012	0.312	-0.126	-0.051	-0.035	0.099	0.061	-0.165	-0.029	0.123	0.099	0.123	0.038	-0.171	0.013	-0.007	0.323	0.227	0.184	0.366	-0.210	1	-0.101	-0.146	0.018	-0.056
(23) Office Size	0.019	0.399	-0.140	-0.006	-0.030	0.010	0.234	-0.025	0.007	0.221	0.166	0.178	0.128	-0.023	0.289	-0.021	0.500	0.224	0.182	-0.316	0.522	-0.063	1	-0.004	0.028	-0.070
(24) Litigate	0.058	-0.224	0.191	0.047	0.032	-0.219	0.063	0.213	-0.024	-0.173	-0.113	-0.145	0.004	1.000	0.000	-0.084	-0.131	-0.104	-0.110	-0.077	0.159	-0.171	-0.023	1	-0.010	0.040
(25) Restatement	-0.016	0.022	0.015	0.039	0.010	0.014	0.003	-0.061	-0.002	0.001	-0.002	-0.012	-0.005	-0.016	0.041	-0.031	0.048	0.012	-0.038	0.012	-0.002	0.035	0.009	-0.016	1	0.014
(26) Abs DA	0.003	-0.217	0.121	0.155	0.111	0.180	-0.062	-0.025	0.125	-0.378	-0.357	-0.346	-0.029	0.048	-0.080	0.033	-0.136	-0.097	-0.082	0.008	-0.070	-0.047	-0.172	0.048	-0.004	1

This table shows the correlation coefficients for all the variables used in this analysis. 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. "Restatement" is a dummy variable that takes the value of one if the year-end financial statements are restated and zero otherwise. All variables are winsorized at the top and bottom percentiles of the distribution. All variables are as defined in Appendix A.

Table 2.3: Effect of distraction event on restatements

Dependent Variable:	Distraction=1		Distraction=0		Rest <sub>t,t+3</sub>
	Rest <sub>t,t+2</sub>	Rest <sub>t,t+3</sub>	Rest <sub>t,t+2</sub>	Rest <sub>t,t+3</sub>	
	(1)	(2)	(3)	(4)	(5)
Treated	0.384*	0.481**	0.065	0.003	0.030
	(1.657)	(2.217)	(0.797)	(0.034)	(0.399)
Distraction					-0.152
					(-0.971)
Treated × Distraction					0.335*
					(1.876)
Sales Growth	0.193	0.116	-0.047	0.005	0.014
	(1.298)	(0.870)	(-0.689)	(0.093)	(0.272)
PPE Growth	-0.111	0.084	0.109*	0.085	0.087
	(-0.749)	(0.458)	(1.715)	(1.307)	(1.505)
Loss	-0.246	-0.116	0.332***	0.037	0.036
	(-1.015)	(-0.544)	(3.745)	(0.434)	(0.475)
Leverage	0.269	-0.062	0.426***	0.224	0.174
	(0.580)	(-0.150)	(2.857)	(1.523)	(1.279)
Return	0.126	0.064	-0.057	0.024	0.028
	(1.174)	(0.704)	(-1.287)	(0.644)	(0.837)
Big4	-0.382	-1.982	-0.980	-2.390**	-2.401**
	(-0.125)	(-0.994)	(-0.592)	(-2.046)	(-2.261)
MB	-0.016	0.002	-0.011*	-0.008	-0.007
	(-0.802)	(0.143)	(-1.852)	(-1.355)	(-1.396)
ROA	-0.559	-0.285	-0.079	0.115	0.072
	(-1.269)	(-0.823)	(-0.378)	(0.618)	(0.451)
Bankruptcy	0.091**	0.029	0.034*	0.004	0.008
	(2.284)	(0.858)	(1.811)	(0.235)	(0.562)
Size	-0.066	0.325***	-0.238***	0.113***	0.135***
	(-0.555)	(3.356)	(-5.287)	(2.753)	(3.678)
CFO	-0.847	-0.350	0.121	-0.035	-0.071
	(-1.627)	(-0.684)	(0.520)	(-0.157)	(-0.360)
fiscal month	-0.035	0.004	-0.049	0.005	0.017
	(-0.168)	(0.019)	(-0.580)	(0.062)	(0.233)
Ln (Audit Fees)	0.414*	-0.210	0.313***	-0.149*	-0.159**
	(1.853)	(-1.264)	(3.666)	(-1.934)	(-2.323)
Ln (Non Audit Fees)	-0.095	-0.075	0.015	0.005	-0.004
	(-1.344)	(-1.124)	(0.512)	(0.194)	(-0.160)
Litigate	0.037	-0.413*	-0.052	-0.118	-0.143
	(0.131)	(-1.669)	(-0.465)	(-1.158)	(-1.539)
Tenure	-0.419**	-0.045	-0.117	0.032	0.035
	(-2.011)	(-0.211)	(-1.223)	(0.372)	(0.445)
Influence	-1.010	-2.441*	0.588	-0.110	-0.258
	(-0.555)	(-1.802)	(1.160)	(-0.249)	(-0.627)
Clients	0.027	0.005	-0.007	-0.004	-0.003
	(1.411)	(0.232)	(-1.391)	(-0.977)	(-0.833)
Office Size	-0.143	0.761	0.227	-0.103	-0.082
	(-0.148)	(1.073)	(1.627)	(-0.789)	(-0.674)
M_A	0.201	0.296	0.206**	0.075	0.098
	(0.701)	(1.066)	(2.286)	(0.842)	(1.174)
Rest <sub>t-1</sub>	0.939***	4.397***	0.515***	3.963***	3.959***
	(3.970)	(22.110)	(5.187)	(57.769)	(63.027)
City_Industry_expert	0.573**	0.259	0.019	0.066	0.092
	(2.231)	(1.038)	(0.189)	(0.742)	(1.114)
Foreign	0.473*	0.086	0.002	0.080	0.092
	(1.932)	(0.396)	(0.026)	(0.992)	(1.253)
Liquidity	-0.066	-0.031	-0.035*	0.000	-0.005
	(-1.546)	(-1.048)	(-1.898)	(0.014)	(-0.404)
Constant	-3.115	-5.949	-9.141***	0.956	1.522
	(-0.240)	(-0.623)	(-4.055)	(0.438)	(0.759)
Year FE	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y
Audit Office FE	Y	Y	Y	Y	Y
Observations	1,823	2,430	13,351	16,017	18,864
Pseudo R-squared	0.204	0.506	0.0823	0.456	0.458

This table shows the effect of the distraction event on Restatements. "Restatement" is a dummy variable that takes the value of one if the year-end financial statements are restated and zero otherwise. "Treated" is a dummy variable that takes the value of one if the audit-client firm office are situated in a different city as compared to the audit-office and zero otherwise. Columns (1) and (2) show the effect on the audit offices' clients in the years that the audit office is distracted. Columns (3) and (4) show the effect on the audit offices' clients in the years that the audit office is not distracted. Fixed effects are as indicated. Clustering of standard errors is a two way adjustment on client firms and year. Z-statistics are reported in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 2.4: Differences between distraction and non-distraction years on restatements

Dependent Variable:	Treated=1		Treated=0	
	Rest <sub>t,t+2</sub> (1)	Rest <sub>t,t+3</sub> (2)	Rest <sub>t,t+2</sub> (3)	Rest <sub>t,t+3</sub> (4)
Distraction_year	0.203** (2.081)	0.209** (2.051)	-0.030 (-0.185)	-0.144 (-0.864)
Sales Growth	0.057 (0.904)	0.014 (0.224)	0.073 (0.875)	0.022 (0.239)
PPE Growth	-0.019 (-0.311)	0.094 (1.294)	-0.003 (-0.031)	0.088 (0.855)
Loss	0.052 (0.565)	-0.020 (-0.215)	0.021 (0.151)	0.175 (1.228)
Leverage	0.505*** (3.179)	0.312* (1.857)	0.120 (0.506)	-0.115 (-0.441)
Return	0.069* (1.810)	0.059 (1.602)	-0.152** (-2.421)	-0.028 (-0.398)
Big4	-1.526 (-1.621)	-1.284 (-1.265)	-0.975 (-0.577)	-0.278 (-0.195)
MB	-0.016*** (-2.578)	-0.014** (-2.300)	0.006 (0.628)	0.014 (1.358)
ROA	0.043 (0.206)	0.089 (0.412)	0.175 (0.695)	0.114 (0.457)
Bankruptcy	0.034** (2.043)	0.012 (0.692)	-0.000 (-0.000)	-0.008 (-0.401)
Size	0.033 (0.767)	0.135*** (2.974)	0.015 (0.239)	0.176*** (2.654)
CFO	-0.147 (-0.648)	-0.143 (-0.602)	0.078 (0.217)	0.458 (1.251)
fiscal month	-0.034 (-0.394)	0.036 (0.391)	0.106 (0.769)	0.092 (0.649)
Ln (Audit Fees)	-0.007 (-0.095)	-0.119 (-1.460)	-0.159 (-1.376)	-0.352*** (-2.713)
Ln (Non Audit Fees)	-0.031 (-1.163)	-0.044 (-1.490)	0.128*** (2.680)	0.071 (1.512)
Litigate	-0.153 (-1.424)	-0.164 (-1.491)	-0.073 (-0.385)	-0.041 (-0.194)
Tenure	0.026 (0.282)	0.069 (0.725)	0.061 (0.398)	0.005 (0.029)
Influence	0.805 (1.522)	-0.000 (-0.000)	-1.117 (-1.186)	-0.516 (-0.574)
Clients	-0.005 (-1.094)	-0.004 (-0.881)	0.004 (0.462)	-0.003 (-0.402)
Office Size	0.049 (0.352)	-0.216 (-1.401)	0.265 (1.254)	0.243 (1.107)
M_A	0.176* (1.815)	0.141 (1.342)	0.131 (0.955)	0.011 (0.076)
Rest <sub>t-1</sub>	3.028*** (40.689)	3.997*** (50.421)	2.934*** (27.053)	3.801*** (33.428)
City_Industry_expert	0.047 (0.461)	0.135 (1.311)	0.091 (0.566)	0.090 (0.561)
Foreign	0.090 (1.030)	0.119 (1.302)	0.015 (0.114)	0.038 (0.275)
Liquidity	-0.013 (-0.875)	-0.011 (-0.772)	0.027 (0.927)	0.021 (0.745)
Constant	-1.674 (-0.752)	3.493 (1.433)	-6.661* (-1.926)	-4.138 (-1.182)
Year FE	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y
Audit Office FE	Y	Y	Y	Y
Observations	12,537	12,537	5,214	5,214
Pseudo R-squared	0.318	0.466	0.313	0.446

This table shows the effect of distraction and non-distraction years on Restatements. "Restatement" is a dummy variable that takes the value of one if the year-end financial statements are restated and zero otherwise. "Treated" is a dummy variable that takes the value of one if the audit-client firm office are situated in a different city as compared to the audit-office and zero otherwise. Columns (1) and (2) show the effect of the distraction years on the treated group of clients. Columns (3) and (4) show the effect of the non-distraction years on the treated group of clients. Fixed effects are as indicated. Clustering of standard errors is a two way adjustment on client firms and year. Z-statistics are reported in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 2.5: Audit Fees paid after the distraction

Dependent Variable:	Distraction=1	Distraction=0
	Ln (Audit Fees)	Ln (Audit Fees)
	(1)	(2)
Treated	-0.520*	-0.016
	(-1.763)	(-0.281)
Sales Growth	-0.039	0.000
	(-1.318)	(0.076)
PPE Growth	0.012	-0.011*
	(0.334)	(-1.834)
Loss	0.012	0.030***
	(0.292)	(3.544)
Leverage	-0.048	0.001
	(-0.644)	(0.079)
Return	0.000	0.001
	(0.008)	(0.310)
MB	-0.001	0.001
	(-0.597)	(1.416)
ROA	0.003	-0.092***
	(0.051)	(-4.437)
Bankruptcy	-0.027***	-0.007***
	(-3.070)	(-3.175)
Size	0.292***	0.297***
	(7.631)	(32.381)
CFO	0.003	-0.055**
	(0.035)	(-2.422)
fiscal month	0.593***	0.273***
	(2.905)	(5.376)
Ln (Non Audit Fees)	-0.006	-0.009***
	(-0.451)	(-2.901)
Influence	2.191***	2.332***
	(4.179)	(26.003)
Clients	-0.015***	-0.006***
	(-4.276)	(-10.080)
Office Size	0.279***	0.414***
	(3.047)	(26.591)
M_A	-0.014	0.019**
	(-0.309)	(2.412)
City_Industry_expert	0.308***	0.187***
	(4.794)	(13.575)
Foreign	0.053	0.088***
	(0.898)	(6.427)
Liquidity	-0.011	-0.018***
	(-1.459)	(-8.049)
Constant	7.591***	4.541***
	(4.610)	(17.200)
Year-Industry FE	Y	Y
Firm FE	Y	Y
Audit Office FE	Y	Y
Observations	1,767	17,364
Adjusted R-squared	0.917	0.947

This table shows the effect of the distraction event on audit fees paid by the client firms. The dependent variable is the natural logarithm of audit fees. "Treated" is a dummy variable that takes the value of one if the audit-client firm office is in a different city as compared to the audit-office and zero otherwise. Column (1) shows the audit fees of the treated group as compared to the control group during distraction years whereas column (2) shows this same effect during non-distraction years. Fixed effects are as indicated. Clustering of standard errors is a two way adjustment on client firms and year level. T-statistics are reported in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 2.6: Ability to gain new clients:

Dependent Variable: Pr (gain)	(1)	(2)
Distraction year	-0.163*** (-2.775)	-0.209*** (-2.994)
Sales Growth	-0.017 (-0.502)	0.078** (2.022)
PPE Growth	0.062 (1.584)	0.058 (1.343)
Loss	0.004 (0.087)	-0.005 (-0.080)
Leverage	-0.065 (-0.831)	0.010 (0.113)
Return	0.080*** (3.294)	-0.013 (-0.499)
Big4	0.022 (0.528)	-0.192*** (-3.612)
MB	-0.005* (-1.739)	-0.002 (-0.535)
ROA	-0.221** (-2.317)	-0.009 (-0.080)
Bankruptcy	0.015** (2.125)	-0.005 (-0.609)
Size	0.052*** (2.665)	-0.011 (-0.410)
CFO	0.225* (1.868)	-0.013 (-0.090)
fiscal month	-0.001 (-0.034)	-0.036 (-0.685)
Ln (Audit Fees)	-0.336*** (-9.038)	0.074 (1.496)
Ln (Non Audit Fees)	0.122*** (8.876)	0.013 (0.787)
Litigate	-0.096** (-2.346)	0.011 (0.160)
Tenure	-0.114** (-2.228)	-0.034 (-0.571)
Influence	-0.611*** (-2.739)	-1.399*** (-5.124)
Clients	0.077*** (30.628)	0.093*** (26.695)
Office Size	-0.129*** (-3.668)	-0.057 (-1.338)
M_A	-0.362*** (-7.725)	0.026 (0.442)
City_Industry_expert	0.034 (0.789)	-0.044 (-0.769)
Foreign	-0.200*** (-4.711)	-0.100* (-1.872)
Liquidity	-0.035*** (-4.054)	-0.002 (-0.204)
Constant	5.219*** (12.412)	-7.250*** (-8.728)
Year FE	N	Y
Industry FE	N	Y
Observations	21,556	21,510
Pseudo R-squared	0.178	0.355

This table shows the effect of the distraction event on the probability of gaining a new client. The dependent variable takes the value of one if the audit office gains a new client the following year. "Treated" is a dummy variable that takes the value of one if the audit-client firm office is in a different city as compared to the audit-office and zero otherwise. Fixed effects are as indicated. Clustering of standard errors is a two way adjustment on client firms and year level. Z-statistics are reported in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 2.7: Summary statistics after entropy balancing method:

<b>Before weighting:</b>	Treated		Control	
	mean	variance	mean	variance
ROA	-0.153	0.231	-0.086	0.165
Loss	0.472	0.249	0.375	0.235
Leverage	0.202	0.086	0.238	0.093
Big4	0.630	0.233	0.619	0.236
Bankruptcy	0.599	30.620	0.982	20.720
Size	5.642	4.184	6.362	4.049
CFO	-0.030	0.123	0.038	0.080
f_month	0.692	0.213	0.762	0.182
Ln (Audit Fees)	13.370	1.751	13.730	1.581
Ln (Non Audit Fees)	11.770	3.079	12.000	3.150
Tenure	0.753	0.186	0.792	0.165
M_A	0.124	0.109	0.150	0.128
Influence	0.050	0.008	0.061	0.009
Clients	41.92	740.1	34.72	569.1
Office Size	17.520	1.424	17.570	1.287
City_Industry_Expert	0.206	0.164	0.237	0.181
Liquidity	3.583	13.710	2.838	7.575
Litigate	0.516	0.250	0.415	0.243
<b>After weighting:</b>				
	Treated		Control	
	mean	variance	mean	variance
ROA	-0.153	0.231	-0.153	0.231
Loss	0.472	0.249	0.472	0.250
Leverage	0.202	0.086	0.202	0.086
Big4	0.630	0.233	0.630	0.233
Bankruptcy	0.599	30.620	0.599	30.620
Size	5.642	4.184	5.643	4.185
CFO	-0.030	0.123	-0.030	0.123
f_month	0.692	0.213	0.692	0.213
Ln (Audit Fees)	13.370	1.751	13.370	1.751
Ln (Non Audit Fees)	11.770	3.079	11.770	3.079
Tenure	0.753	0.186	0.753	0.186
M_A	0.124	0.109	0.124	0.109
Influence	0.050	0.008	0.050	0.008
Clients	41.92	740.1	41.92	740.1
Office Size	17.520	1.424	17.520	1.424
City_Industry_Expert	0.206	0.164	0.206	0.164
Liquidity	3.583	13.710	3.583	13.710
Litigate	0.516	0.250	0.516	0.250

In panel A we show the summary statistics of the treated and control group of firms prior to the entropy balancing method. In panel B we see the summary statistics of the two group of firms after applying entropy balancing. All variables are defined in Appendix A.

Table 2.8: Effect of distraction event after entropy balancing method

Dependent Variable:	Rest <sub>t,t+2</sub>	Rest <sub>t,t+3</sub>
	(1)	(2)
Treated	0.349*	0.439*
	(1.651)	(1.959)
Sales Growth	0.146	0.122
	(1.356)	(0.998)
PPE Growth	-0.320**	0.194
	(-2.288)	(1.009)
Loss	-0.250	-0.142
	(-1.085)	(-0.538)
Leverage	-0.041	-0.386
	(-0.113)	(-0.923)
Return	0.049	0.046
	(0.523)	(0.467)
Big4	-0.527	-2.640
	(-0.230)	(-1.122)
MB	0.010	-0.001
	(0.732)	(-0.131)
ROA	-0.168	-0.506
	(-0.461)	(-1.344)
Bankruptcy	0.007	0.044
	(0.147)	(0.943)
Size	0.228**	0.416***
	(1.996)	(3.858)
CFO	-1.000*	-1.487**
	(-1.907)	(-2.267)
fiscal month	-0.125	-0.024
	(-0.586)	(-0.097)
Ln (Audit Fees)	-0.130	-0.435**
	(-0.825)	(-2.268)
Ln (Non Audit Fees)	-0.022	0.007
	(-0.334)	(0.093)
Litigate	-0.217	-0.456
	(-0.780)	(-1.615)
Tenure	-0.008	0.011
	(-1.130)	(0.045)
Influence	-0.728	-2.713*
	(-0.478)	(-1.801)
Clients	-0.008	-0.025
	(-0.347)	(-1.106)
Office Size	0.297	1.358
	(0.360)	(1.568)
M_A	0.080	0.351
	(0.292)	(1.083)
Rest <sub>t-1</sub>	3.074***	4.461***
	(14.587)	(19.418)
City_Industry_expert	0.224	0.305
	(0.871)	(1.145)
Foreign	0.301	0.257
	(1.167)	(1.074)
Liquidity	-0.034	-0.076*
	(-0.944)	(-1.863)
Constant	-1.315	-11.093
	(-0.123)	(-0.969)
Year FE	Y	Y
Industry FE	Y	Y
Audit Office FE	Y	Y
Observations	2,283	2,407
Pseudo R-squared	0.328	0.511

This table shows the effect of the distraction event on Restatements after entropy balancing. "Restatement" is a dummy variable that takes the value of one if the year-end financial statements are restated in year t and zero otherwise. "Treated" is a dummy variable that takes the value of one if the audit-client firm office are situated in a different city as compared to the audit-office and zero otherwise. Column (1) shows the effect of a distraction event on the other clients of the auditor's portfolio from year t to year t+2 whereas column (2) extends the period up to t+3. Fixed effects are as indicated. Clustering of standard errors is a two way adjustment on client firms and year level. Z-statistics are reported in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 2.9: Capacity constraints

Dependent Variable	Small Offices		Big Offices	
	Rest <sub>t,t+2</sub> (1)	Rest <sub>t,t+3</sub> (2)	Rest <sub>t,t+2</sub> (3)	Rest <sub>t,t+3</sub> (4)
Treated	0.505* (1.811)	0.708*** (2.663)	-0.234 (-0.708)	-0.011 (-0.028)
Sales Growth	0.174 (1.461)	0.226 (1.499)	0.112 (0.348)	-0.482 (-1.359)
PPE Growth	-0.209 (-0.963)	-0.111 (-0.469)	-0.503* (-1.865)	0.526*** (2.647)
Loss	-0.063 (-0.243)	0.027 (0.101)	-0.339 (-0.884)	-0.335 (-0.751)
Leverage	-0.025 (-0.056)	-0.147 (-0.278)	0.062 (0.097)	0.762 (1.284)
Return	0.066 (0.693)	0.028 (0.241)	0.010 (0.048)	0.298 (1.483)
Big4	2.545 (0.939)	-2.575 (-0.883)	-3.724 (-0.757)	-3.172 (-0.657)
MB	-0.007 (-0.441)	-0.010 (-0.727)	0.059*** (2.721)	0.020 (1.027)
ROA	0.541 (1.466)	-0.284 (-0.670)	0.216 (0.187)	0.756 (0.786)
Bankruptcy	-0.038 (-1.020)	0.042 (0.944)	0.079 (0.572)	0.020 (0.336)
Size	0.293** (2.254)	0.356*** (2.588)	0.264* (1.705)	0.367** (2.119)
CFO	-1.049* (-1.936)	-0.042 (-0.064)	-1.094 (-0.929)	-1.525* (-1.727)
f_month	-0.297 (-1.191)	-0.105 (-0.367)	-0.508 (-1.485)	0.288 (0.856)
Ln (Audit Fees)	-0.125 (-0.571)	-0.111 (-0.476)	-0.055 (-0.251)	-0.618** (-2.118)
Ln (Non Audit Fees)	-0.017 (-0.212)	0.027 (0.281)	-0.322*** (-3.250)	-0.298*** (-2.989)
Litigate	-0.243 (-0.796)	-0.289 (-0.879)	-0.779* (-1.670)	-0.610 (-1.488)
Tenure	0.215 (0.750)	-0.222 (-0.702)	-0.901** (-2.467)	0.380 (1.111)
Influence	-0.646 (-0.410)	-5.200*** (-2.778)	1.816 (0.585)	5.186* (1.774)
Clients	-0.041 (-0.726)	-0.183*** (-2.765)	0.156 (0.791)	0.141 (0.696)
Office Size	-1.120 (-1.067)	0.743 (0.656)	9.011 (1.613)	8.760 (1.574)
M_A	0.163 (0.466)	0.099 (0.253)	-0.145 (-0.383)	0.535 (1.111)
Rest <sub>t-1</sub>	3.696*** (13.940)	4.923*** (15.980)	3.429*** (10.328)	4.791*** (10.613)
City_Industry_Expert	0.036 (0.117)	0.431 (1.320)	0.242 (0.508)	0.212 (0.458)
Foreign	0.243 (0.951)	-0.258 (-0.885)	0.413 (1.079)	0.769* (1.933)
Liquidity	0.028 (0.652)	-0.060 (-1.493)	-0.033 (-0.529)	0.002 (0.041)
Constant	15.264 (1.065)	-3.475 (-0.227)	-175.025 (-1.515)	-167.380 (-1.455)
Year FE	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y
Observations	1,492	1,587	750	754
Pseudo R-squared	0.375	0.538	0.397	0.545

This table shows the effect of the distraction event on restatement announcements after splitting the sample into small and big sized offices based on total audit fees they earn. We construct quartiles and we assign big offices to the quartile with the highest audit fees. Small offices are assigned to all other quartiles. "Restatement" is a dummy variable that takes the value of one if the year-end financial statements are restated and zero otherwise. "Treated" is a dummy variable that takes the value of one if the audit-client firm office is in a different city as compared to the audit-office and zero otherwise. Columns (1) and (2) show the results on the small size offices and columns (3) and (4) of the big size offices. Fixed effects are as indicated. Clustering of standard errors is a two way adjustment on client firms and year. Z-statistics are reported in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 2.10: Effect of distraction event on discretionary accruals

Dependent Variable: Abs (DA) Jones	(1)	(2)	(3)
Treated <sub>t-1</sub>	0.021** (2.000)	0.158*** (2.804)	0.145*** (3.154)
Controls <sub>t-1</sub>	N	Y	Y
Year-Industry FE	N	Y	N
Year FE	N	N	Y
Industry FE	N	N	N
Firm FE	N	Y	Y
Audit Office FE	N	Y	Y
Observations	2,253	1,136	1,323
Adjusted R-squared	0.174	0.242	0.274

This table shows the effect of the distraction event on earnings management. The dependent variable is the absolute value of discretionary accruals using the modified Jones model (1991) and as it was further modified by Kothari, Leone, and Wasley 2005. Fixed effects are as indicated. Clustering of standard errors is a two way adjustment on client firms and year. T-statistics are reported in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 2.11: Effect of distraction event on internal control material weaknesses

Dependent Variable	Distraction=1		Distraction=0	
	IC_Weakness (1)	Number of weaknesses (2)	IC_Weakness (3)	Number of weaknesses (4)
Treated	0.292* (1.663)	2.783*** (3.663)	0.205 (1.304)	0.094 (1.240)
Controls	Y	Y	Y	Y
Year-Industry FE	N	Y	Y	N
Year FE	Y	N	N	Y
Industry FE	Y	N	N	Y
Firm FE	N	Y	Y	N
Audit Office FE	Y	Y	Y	Y
Observations	1,927	870	12,663	14,512
Pseudo R-squared	0.394	0.566	0.460	0.352

This table shows the effect of the distraction event on internal control material weaknesses (ICMW). The dependent variable in columns (1) and (3) is a dummy that takes the value of one if the auditor issues an ICMW for a specific company, and zero otherwise. Columns (2) and (4) include the continuous measurement that counts how many material weaknesses are issued for each company. Fixed effects are as indicated. Clustering of standard errors is a two way adjustment on client firms and year. T-statistics are reported in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 2.12: Effort made to the sued firms

Dependent Variable: Ln (Audit Fees)	(1)	(2)
Class	0.148** (2.449)	0.096** (1.970)
Sales Growth	0.030 (1.595)	-0.029** (-2.094)
Leverage	-0.153*** (-2.948)	-0.053 (-1.394)
Big4	0.271*** (10.260)	-
Return	0.013 (1.028)	0.005 (0.407)
MB	0.005*** (2.817)	0.001 (0.636)
ROA	0.039 (0.929)	-0.072** (-2.019)
Bankruptcy	-0.038*** (-9.899)	-0.013*** (-4.060)
Size	0.478*** (49.738)	0.339*** (33.000)
Ln (Non Audit Fees)	-0.019** (-2.052)	0.021*** (2.586)
Quick_w	0.000*** (2.936)	0.000 (1.283)
Litigate	-0.006 (-0.241)	-0.043 (-1.430)
Tenure	0.027 (0.860)	0.012 (0.431)
Influence	0.881*** (5.083)	3.060*** (13.940)
Foreign	0.403*** (14.729)	0.219*** (8.837)
Liquidity	-0.020*** (-4.859)	-0.034*** (-10.185)
Constant	10.544*** (107.844)	11.092*** (118.982)
Year-Industry FE	N	Y
Audit Office FE	N	Y
Observations	3,512	3,310
Adjusted R-squared	0.714	0.859

This table shows the audit fees paid by the clients that are sued. The dependent variable is the natural logarithm of audit fees. Class is a dummy variable that takes the value of one if the client is sued for a non accounting class action suit, and zero otherwise. Fixed effects are as indicated. Clustering of standard errors is a two way adjustment on client firms and year. T-statistics are reported in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

# Chapter 3

## Audit Office' Benefits of Auditing a Reputable Client

### 3.1 Introduction

Examining how audit offices react to a change in their reputation is important in order to understand the city-level auditing behavior. In this study, we test the impact of a positive reputation shock on clients' switching decisions and the spill over effects on the audit pricing of the office's clientele. Specifically, we investigate how a client's entrance to the America's 100 Most Admired Companies' List (henceforth MAC list)<sup>1</sup> can impact the ability of that particular audit office to obtain new clients in the following years and the subsequent adjustments to the audit fees. The MAC list is a very popular and widely read magazine concerning a company's reputation. It is also used in the finance and management academic literature as an independent measure that captures firm's reputation (Cao, L. A. Myers, and Omer 2012; Focke, Maug, and Niessen-Ruenzi 2017; Fombrun and Shanley 1990; Roberts and Dowling 2002).

Prior research has considerably explored the consequences of a negative reputation shock on the clients' switching decisions (Cahan, Emanuel, and Sun 2009; Skinner and Srinivasan 2012; J. Weber, Willenborg, and Jieying Zhang 2008) and on the market perceived quality of the audit

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<sup>1</sup>We use the 100 Most Admired Companies' List as a reputation proxy that provides firm prestige (Cao, L. A. Myers, and Omer 2012, Focke, Maug, and Niessen-Ruenzi 2017. More detailed information on the list can be found in section 3.2.

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firm (Chaney and Philipich 2002; Krishnamurthy, J. Zhou, and N. Zhou 2006). Whilst most of the studies in auditing reputation refer to the national audit firm, some studies look at the consequences of a reputation shock at the audit office level (J. R. Francis and M. D. Yu 2009; J. R. Francis and Michas 2013; J. R. Francis, Mehta, and W. Zhao 2017; Krishnan 2005).<sup>2</sup>

We depart from all of these studies as we check how a routine and positive reputation shock at the audit office level can attract more clients and how audit pricing adjusts for the existing clients of that audit office.

One study is closely related to ours, the one of J. R. Francis, Mehta, and W. Zhao 2017 that identifies how a gain (loss) of an industry client leader could make other clients more willing (reluctant) to contract with that particular audit office and how audit offices that face these reputation shocks could change audit pricing of their other clients. We differ from this study as we focus only on a positive reputation shock emerged from having a client firm entering the 100 MAC list. Auditing a client that enters the prestigious list and continues contracting with the same audit office, can generate a positive reputation shock regarding the expertise, ability and quality delivered by the audit office that audits the prestigious client (henceforth prestigious office). For that reason, more clients would be willing to contract with that particular audit office. On the other hand, changing your auditor could be problematic. It is possible to be seen as a negative publicity for the very same client firm as changing might be because of a result of client misconduct, opinion shopping, changes resulting from management turnover or unforeseen conflicts of interest (see for e.g. Alteryx firm and PwC where the auditor alerted the company of breach of auditing standards of independence).

Our first test focuses on the ability of a prestigious office to attract new clients because of a positive signal sent regarding its expertise and ability. This is consistent with the herding behavior according to which firms tend to imitate others that seem to have an information advantage (J. R. Francis, Mehta, and W. Zhao 2017). Our second test involves the audit pricing of the prestigious audit offices. Expertise and ability are priced (J. R. Francis, Mehta, and W. Zhao 2017;

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<sup>2</sup>Specifically, Krishnan 2005 identifies that Arthur Andersen's clients at the Houston office are delivered worse audit quality as other audit offices of Big 6 auditing firms. J. R. Francis and Michas 2013 find that client firms that belong to the same audit-office portfolio tend to receive similar audit quality and J. R. Francis and M. D. Yu 2009 indicate that large audit offices tend to deliver better audit quality)

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Klein and Leffler 1981), and precisely because of that, prestigious audit offices might decide to adopt different pricing structures to their other existing clients after they experience the positive reputation shock. However, existing clients might be reluctant to pay a fee premium and might decide to change auditor if their particular audit office increases audit fees. Our main results indicate that prestigious audit offices are more likely to attract new clients two years after they become prestigious and also charge higher audit fees to their existing clients in the year following the entrance of a client in the 100 MAC list. This list is available to the public in the January issue of each year. This means that the 100 MAC list for 2020, for example, was released in January 2021. Thus, client firms that could consider changing to the reputable audit office would lack the time to do it right in the year of the publication. For that reason, we observe statistically significant results two years after a client enters the list.

This study contributes to the literature on city-level audit offices and reputation. Specifically we test on how a positive reputation shock at the audit office level could impact audit office's to attract new clients but also its bargaining power and its audit quality towards its other clients. So far, the literature looking at the effects of reputation on auditing focuses on the national auditors and on the market's perception quality of audits when the audit offices faces a negative reputation shock (Cahan, Emanuel, and Sun 2009; Chaney and Philipich 2002; Krishnamurthy, J. Zhou, and N. Zhou 2006; Skinner and Srinivasan 2012; J. Weber, Willenborg, and Jieying Zhang 2008). Our study focuses on the city-level audit offices, rather the national audit offices. This is of interest to accounting firms, their respective client firms, but also to regulators.

We also contribute to the literature on audit offices showing that having a prestigious client could enhance the ability of the audit office to attract new clients but also its bargaining power by charging higher audit fees to its already existing clients. So far, literature on audit offices has mainly focused on how different audit office characteristics could affect its audit quality. For example, auditors-city industry expertise allows for higher bargaining power (Ferguson, J. R. Francis, and Stokes 2003) and larger audit offices tend to deliver better quality of audits (J. R. Francis and M. D. Yu 2009; J. R. Francis and Michas 2013; J. R. Francis, Michas, and M. D. Yu 2013).

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The rest of the paper proceeds as follows. In the next section, we discuss previous literature and we develop our predictions. Section 3 discusses our sample selection, the measurement of firm prestige and explains our research design. In Section 4 we discuss the main results and we present the robustness checks in Section 5. Finally, in Section 6 we conclude.

## **3.2 Prior Literature and Hypotheses Development**

### **3.2.1 Prior Research on Audit Reputation**

Auditors face engagement risk defined as “the loss or injury from litigation, adverse publicity, or other events arising in connection with the audited financial statements” (Statements of Auditing Standards 106). For that, prior academic literature focuses on the effects of an adverse reputation event on an auditor’s market perceived quality. Chaney and Philipich 2002 identify a decline in the share price of Arthur Andersen’s clients after the Enron scandal became public. Auditor’s loss of independence is also penalized by the market as an indication of a decline in the perceived audit quality (Krishnamurthy, J. Zhou, and N. Zhou 2006). In a similar manner, Cahan, Emanuel, and Sun 2009 identify a loss in the share price spilling to non-US Andersen clients as a result of a decrease in the market’s perceived audit quality via decreases in the auditor’s reputation. The literature that uses the Enron scandal as a shock to auditor’s reputation suggests that the market presumes a loss in the audit quality resulting from the loss of reputation. While it identifies a link between reputation risk and audit quality it fails to disentangle the indirect effects of litigation risk in audit quality.

Two other studies investigate the effect of audit reputation loss on audit quality in low-litigation jurisdictions. J. Weber, Willenborg, and Jieying Zhang 2008 focus on a reputation failure of KPMG’s German affiliate. Germany is considered to offer auditors protection against shareholders litigation risk and costs. Evidence shows that KPMG clients not only experienced a decline in their share price but they were also inclined in changing their auditors. Similarly, in Japan (an almost zero litigation risk environment), a PWC’s affiliate experienced a massive failure in its reputation after being discovered that one of its clients was involved in accounting

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fraud. Results show that PWC's affiliate clients, and in particular those with greater growth opportunities, were more likely to drop PWC after the event (Skinner and Srinivasan 2012). The two latter studies indicate that a threat on auditors' reputation provides incentives for auditors to offer higher audit quality regardless of the litigation risk.

Overall, previous literature indicates that a decline in the auditor's reputation could be detrimental for the auditor and its clients. However, in contrast to this literature that focuses on a specific negative reputation shock, we examine the consequences of a routine positive reputation shock resulting from an auditor's existing client entering the "World's Most Admired 100 Companies" list. To our best knowledge, there are two studies that focus on the reputation effects of companies that enter this list. First, the study of Cao, L. A. Myers, and Omer 2012 examines the financial reporting quality of the firms that enter the Fortune's America's Most Admired Companies List (1000 companies). They find that these companies exhibit better financial reporting quality as evidence of lower misstatements and lower discretionary accruals. Also, these companies tend to pay higher audit fees as a result of greater audit effort. In a different line of research, Focke, Maug, and Niessen-Ruenzi 2017 find that the CEOs of prestigious firms, i.e the ones in the 100 most admired companies' list earn less as compared to other CEOs. This is because, the CEOs that work in prestigious firms value their "brand name" and are willing to compromise monetary compensation for career status and prestige.

Our study differs from the literature that focuses on prestigious companies, as we examine how an audit office can be benefited by having a client-firm that enters the 100 MAC list. Specifically, we examine the ability of an audit office to attract new clients and the adjustments it makes on audit pricing if in a particular year a client becomes prestigious.

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### **3.3.2 Negotiating power**

Literature on negotiating power suggest that the end result in a negotiation is derived by the relative bargaining power of the agents negotiating (Kim and Fragale 2005). Hackenbrack, Jenkins, and Pevzner 2014 indicate that audit fees are driven and settled after negotiation, but auditing literature on negotiating power is very limited and most of these studies derive conclusions from the bargaining power studies positing that auditors' bargaining power increases (decreases) when clients bear high (low) costs for switching their auditors. Donelson, Ege, and Leiby 2019 indicate that in an environment of absence of auditor litigation risk and a drop in the auditors' reputation, the bargaining power of the auditors drop resulting into lower audit fees. Similarly, J. R. Francis, Mehta, and W. Zhao 2017 document that audit offices who are now considered as better equipped in terms of expertise, charge higher audit fees after gaining a major industry client. At the same time Zerni 2012 find that not only audit partner industry specialization but also specialization in public companies allows an audit partner to earn higher audit fees. Specialization and expertise leads to a know-how advantage and are earned after repetition and practice of similar tasks (Lapr e, Mukherjee, and Van Wassenhove 2000). In the

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auditing context, for an audit office to achieve in-depth knowledge, recognize problems and their solutions, it should make repetitive audit reports on similar clients.

### 3.3.3 Hypotheses Development

Auditing a company that becomes part of the 100 most admired companies' list might be indicative of higher brand name reputation and expertise. Reputation is a tremendous intangible asset for a company. It requires a difficult, complex, long (Reed and DeFillippi 1990) and time consuming process (Dierickx and Cool 1989) that can lead to competitive advantage. Presumably because of the inherent difficulties and costs entailed in not only building reputation but also restoring it in case of any loss, reputable firms will be willing to contract with audit offices that have the capacity, expertise and knowledge to protect their reputation. Based on the evidence of Cao, L. A. Myers, and Omer 2012, insiders of prestigious companies that are included in the 1000 MAC list are encouraged to maintain and protect their status and reputation. They are thus inclined to deliver better financial reporting quality but also demand better quality of audits. Hence, they are disposed to pay higher audit fees because of higher audit effort and contracting with auditors with better expertise.

Building on this evidence, we argue that a client-firm that is now entering the 100 MAC list and continues contracting with the same audit office sends a positive signal regarding the reputation and expertise of the audit office that is responsible for delivering the audits of the prestigious company. We believe that the perception of the audit office's expertise will be more pronounced across firms that belong to the same industry as the prestigious client. Thus, auditing a prestigious client provides prestige and a positive reputation shock to that particular office, especially when it comes to an alignment of industries. Unfortunately, we cannot move to such an analysis because the number of clients joining an audit office that is now auditing a prestigious client and belong to the same industry as the prestigious firm is very limited. If this is true then, other potential clients might prefer to contract with that particular office due to a contagion effect produced by herding behavior. Herding refers to the phenomenon whereby individuals follow and imitate a particular group that is believed to be better informed resulting

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to a convergence in behavior (Keynes et al. 1930). Evidence provided by J. R. Francis, Mehta, and W. Zhao 2017 suggest that audit office firms that gain (lose) a client that is perceived "a major industry client" experience a positive (negative) reputation shock which in turn causes more (less) industry client gains (losses) due to herding behavior.

If contracting with a prestigious client creates a positive reputation shock in terms of expertise and ability, then more clients are expected to contract with that particular audit office in the year following the entrance of an audit-client firm in the 100 MA list. It is important to note that Fortune releases the names of the companies included in the list of year  $t$  in late January of year  $t+1$ . This suggests that new potential clients would be able to switch auditors in year  $t+2$  as the information on the companies included in the 100 MAC list is revealed in year  $t+1$ . We also present in our analysis the results of audit offices whose clients exit the 100 MAC list. However, we do not make any predictions on that. We believe that, prestigious audit offices will be more likely to attract client firms that belong to the same industry as the prestigious client. This is because, same industry clients are potentially more likely to be informed about the other client that entered the prestigious list from news information (Donelson, Ege, and Leiby 2019). Further, same-industry clients might perceive the reputable auditor as being more specialized in the industry of the prestigious client. This is an intuitive argument following J. R. Francis, Mehta, and W. Zhao 2017. However, there are low number of client gains that belong to the same industry as the prestigious client. For that, in our main analysis we consider all industry-clients and in the robustness checks section we consider only client gains that belong to the prestigious firms' industry. These arguments lead to our first prediction:

***Hypothesis 1:** Audit offices that have a client entering the 100 Most Admired Companies' list in period  $t$ ; are expected to attract new client firms in the period  $t+2$*

Ex-ante, it is unclear whether an audit-office's client entering the 100 MA list in a specific year will induce new clients to contract with that audit office in the following years. This would only be true if the entrance to the list of an existing client sends a positive signal regarding the

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reputation and expertise of the particular audit office.

In our first prediction we argue that audit offices whose client enters the 100 MA list enjoy a positive reputation shock and are perceived as having the expertise necessary to audit a prestigious client. Following Donelson, Ege, and Leiby 2019, we propose that audit offices that have a temporary increase in their reputation, will have higher bargaining power when negotiating audit fees. This is because, audit offices are responsible for the audit engagements with the client firm and audit-offices' characteristics are determinants of audit quality (J. R. Francis and Michas 2013). Clients might view these audit offices as highly specialized. When specialization is achieved, client firms are willing to pay higher audit fees if they consider it as a special service, a form of differentiation. When specialization is demanded though, it should be priced consequently (Klein and Leffler 1981). Thus, if auditing a client that enters the 100 MAC list increases the perception of auditor's expertise on firms similar to the prestigious firms, then the audit offices that now have a prestigious client will have higher bargaining power leading to an increase in audit fees to the other clients in the year following the entrance in the 100 MAC list. In the year of the entrance to the 100 MAC list, audit offices have time to adjust audit fees by the end of the year, even if the revelation of the 100 MAC list happens in January.<sup>3</sup> Thus, when clients negotiate audit fees, it is highly probable to take into account the quality of the audit team responsible for their audits. This leads us to the following hypothesis:

***Hypothesis 2:*** *Audit offices that have a client entering the 100 Most Admired Companies' list in period  $t$ ; are expected to increase audit fees to their other similar client firms in the period  $t+1$*

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<sup>3</sup>Our prediction might not hold because if auditors increase audit fees then, they risk losing important clients if they are not willing to pay this extra premium for advanced specialisation and reputation.

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## 3.4 Research Design

### 3.4.1 Sample Selection

To test our hypotheses in section 2, we use all U.S. listed firms in the Audit Analytics from 2000 until 2011. We start from 2000 as it is the year whereby data on Audit Analytics become available and we stop in 2011 because our data on the 100 Most Admired companies' list end in 2011. We associate each firm-year observation with the respective auditor and audit office. The audit office is defined as the combination of the auditor and the audit city. For example, a KPMG audit office in New York or a Deloitte audit office in Washington DC. We eliminate financial firms and firms in the utilities industries. We then merge the firm-year specific information from Audit Analytics with Compustat to obtain information on firm characteristics. To make sure that our results would not be contaminated by the demise of Arthur Andersen, we eliminate all firm-year observations relating to Arthur Andersen's clients. Since almost all prestigious firms are audited by a Big 4 auditing company, we repeat the analysis after dropping all firm-year observations that are not audited by a Big 4 auditor. The results remain the same. Finally, for the analysis relating to gaining new client firms, we drop observations where a firm changes to an audit office that belongs to the same national firm as these might be internal arrangements of the audit firm and the client.

### 3.4.2 Measurement of Firm Prestige

Based on DeFond and Jieying Zhang 2014, reputation risk damages an asset, namely the reputational capital, and affects clients' retention or attraction. The theoretical definition of it focuses on the long term perception of a player (Cao, L. A. Myers, and Omer 2012). These definitions are consistent with our proxy of company reputation, namely the 100 most admired companies' list.

In order to identify a prestigious company, we use the Fortune's Most Admired Companies list. The magazine is cited and mentioned by widely reputable business magazines such as New York Times, Financial Times and the Wall Street Journal. The Most Admired Companies' list is

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based on 15 thousand surveys completed by firms' senior executives, financial analyst's and directors asking them to select ten companies from the 1000 Most Admired Companies' list. The selection process is built on a Likert Scale test on nine different attributes ranging from zero to ten with zero being poor and ten, excellent. The nine attributes are (1) Ability to attract and retain talented people (2) quality of management, (3) social responsibility to the community and the environment, (4) Innovativeness, (5) Quality of products or services, (6) Wise use of corporate assets, (7) Financial soundness, (8) Long-term investment value, (9) Effectiveness in doing business globally. Participants are not given any further information or instruments and the interpretation of these nine attributes is left on their own judgement. The final ranking of each company is based on the average of the overall attribute scores obtained from the responses. We use the MAC list as our proxy of firm prestige because of two main reasons. First, the inclusion in the 100 Most Admired List is unlikely to be influenced by a company. The attributes used in the survey to determine the scores are provided by an third party on behalf of Fortune, namely the Hay group. What is more, companies are unlikely to find all senior executives and directors participating in the survey so that to influence their opinion. Second, the audit quality is also unlikely to influence rankings as none of the nine attributes mentions the quality of the auditor. The rankings are collected from print editions of the magazine from 2000 until 2011. In our final sample we are left with 713 firms-year observations of firms entering the 100 MAC list. Table 2 shows the characteristics at the firm level of the prestigious companies.

### **3.4.3 Empirical Model**

Using the data and variables explained in section 3.4.1 we proceed in our main analysis to test whether auditing a prestigious client creates a positive reputation shock on the audit office's expertise and ability thereby attracting more clients in the following period. We thus estimate the following regression model to test our first prediction:

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$$Pr(\text{Client Gain}=1)_{r,t+2} = f(\beta_{0,t} + \beta_{i,1}Treated_{r,t} + \beta_{i,2}Controls_{i,r,t} + \alpha_t + \gamma_{industry} + \delta_{\text{audit office}} + \epsilon_{i,t}) \quad (3.1)$$

The dependent variable takes the value of one if an audit office gains a new client in the year t+2, and zero otherwise. The "Treated" variable takes the value of one if the particular audit office is auditing a client-firm that has entered the 100 MAC list, and zero otherwise. The default control sample include audit offices that neither had a client entering the 100 MAC list nor a client exiting the list. "Controls" include a series of control variables to control for switching decisions. These controls capture audit office characteristics such as office size, influence of clients and expertise following Choi et al. 2010 and J. R. Francis and M. D. Yu 2009. We also include firm characteristics that capture firm size, performance and financing (J. R. Francis and M. D. Yu 2009, Lennox and B. Li 2014). All continuous variables are winsorized at the bottom 1% and top 99% percentiles of the distribution. In appendix A there is a complete list of the variables used. We add year and industry ( $\gamma_{industry,t}$ ) fixed effects to capture some time-varying industry effects. We also add audit office fixed effects. Finally, we cluster standard errors using a two-way matching at the company and year level.

Following, we proceed into equation 3.2 to test whether the audit offices that now audit a prestigious client change an extra premium in the other clients that belong to their portfolio in the year following the entrance of a particular client into the 100 MAC list. Hence, we test the following regression model to test our second prediction.

$$\% \Delta \text{Audit Fees}_{i,t,t+1} = \beta_{i,1}Treated_{i,r,t} + \beta_{i,2}\Delta Controls_{i,r,t-1,t} + \alpha_i + \gamma_{industry,t} + \delta_{\text{audit office}} + \epsilon_{i,t} \quad (3.2)$$

Our main dependent variable  $\% \Delta \text{Audit Fees}_{i,t,t+1}$ <sup>4</sup> measures the percentage change in audit fees of each individual client from the period t to t+1. We only include existing clients

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<sup>4</sup>In the robustness checks section we use the change in average audit fees of all existing clients in an audit office that continue contracting with the same audit office for at least two more years (J. R. Francis, Mehta, and W. Zhao 2017).

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of the audit office. We also drop all observations of firms that are in the 100 MAC list so that to avoid our results to be affected by prestigious firms that are willing to pay higher audit fees (Cao, L. A. Myers, and Omer 2012). As an additional check, we only include clients that continue contracting with the same audit office for at least two more years. We include firm fixed effects ( $\alpha_i$ ) to control for time invariant factors at the firm level such as the policy and culture of a company. We also use industry interacted with year fixed effects. Clustering of standard errors is at the client firm and year level. The rest of the variables in the regression are as defined above for equation 3.1 and are used as a year-over-year changes. The advantage of a first-difference approach is that it accounts for unobservable differences in levels between prestigious audit offices and non-prestigious ones. Even though, a self-selection bias is possible to exist in all studies relating to auditor's choice, this is not of a particular concern in our study. First, we use as a control sample the same audit office in years that had no client entering or exiting the 100 MAC list. Thus the same firm is used as its own control. Second, we use first differences to study the incremental effect of (i) having a client entering the 100 MAC list on the audit office's clientele in year  $t+2$  and (ii) the audit fees existing clients of the audit office pay in year  $t+1$  as compared to year  $t$ . Furthermore, in the robustness check section we use audit office-level clients gained and audit fees earned.

### **3.4.4 Summary Statistics and Correlations**

Table 1 shows the summary Statistics of the final sample. Panel A shows firm and audit-offices characteristics. The data include all firms, either prestigious or not, and audit offices that audit a client that is included in the 100 most admired companies' list but also the audit offices that do not audit a prestigious firm. On average, almost all the firms included in our sample are audited by a Big4 auditor, have positive returns and high levels of debt. City-level offices are large in size, as most of them are Big4 audit companies and on average they are contracting with the client for many years. They also audit, on average, six clients with the maximum number reaching twenty two client firms. Audit offices earn on average 21.4 million dollars from their clients and client firms pay on average 3.19 million dollars per year in audit fees.

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Panel B shows the summary statistics after dividing the sample into audit offices that audit a prestigious company and audit offices that do not audit a prestigious company. The two groups differ in firm and audit office characteristics. For this reason, we perform propensity score matching as a robustness check to ensure that our results are not driven by differences in these characteristics. On average, reputable audit offices are one of the Big 4 auditors, are larger, earn higher audit fees and audit more clients than non-reputable offices. They also have longer term relationships with their clients.

In table 2 we observe the firm- and audit-characteristics of the prestigious firms. In general, almost all of them are audited by a Big 4 auditing company, have high levels of debt, pay high audit fees and are contracting with the same auditing firm for 43 years on average.

Table 3 presents Pearson (Spearman) correlation coefficients on the left down (right up) corner. Prestigious companies are positively and significantly correlated with audit fees and number of clients. This is evident in both Pearson and Spearman correlation coefficients.

## 3.5 Results

### 3.5.1 Tests of H1: Audit-client firm entering the 100 Most Admired Companies' list and expected client gains in year t+2.

To test our first hypothesis, we run regression 3.1. This test captures the firm level effect of the probability of clients switching their audit office following the entrance of a particular client in the 100 MAC list. We also present the results of the probability of gaining a client in the year following its entrance in the 100 MAC list.<sup>5</sup> In table 4, in columns (1)-(3) we see that prestigious audit offices are not more likely to gain a new client in year t+1 as it was expected. However, in columns (5) and (6) we observe that prestigious audit offices are more likely to gain a new client in year t+2, consistent with our first hypothesis. Overall, we identify that the entrance of

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<sup>5</sup>Even though we do not expect any change on the probability of an audit office gaining a new client due to lack of time of changing a particular audit office in year t+1 as the publication of the list is made in t+1, we also present the results in the form of a robustness check.

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an existing client into the 100 MAC list generates a positive reputation shock for that particular audit office attracting therefore new clients in year  $t+2$ , i.e. two years after the entrance to the 100 MAC list. We also include the results of having an existing client exiting the 100 MAC list. We see that the effect is not symmetrical, i.e. the exit from the list does not cause any significant loss in the reputation and status of the audit office. This is consistent with the findings of Focke, Maug, and Niessen-Ruenzi 2017. They find that CEOs of firms entering the 100 MAC list are willing to sacrifice their salary for status, whereas the salary of CEOs of firms that exit the list remains unaffected.

### **3.5.2 Tests of H2: Audit-client firm entering the 100 Most Admired Companies' list and audit fees charged to other client firms in the following period.**

In table 5 we see the results of regression 3.2. Our dependent variable captures the percentage change in audit fees of each individual client, excluding the prestigious firms. We include only a subsample of existing clients that continue contracting with the specific audit office for at least two years after the audit office is delivering the audits of a prestigious firm. In this test we also add audit office fixed effects to capture unobserved characteristics that are common to the audit offices. The control variables are included as the year-over-year change. Columns (1) - (4) present how audit fees change for clients whose audit office have a client that is entering the 100 MAC list. In the first two columns we do not include fixed effects and then in columns (3) and (4) we control for the time invariant factors that could bias our results. Overall, the results shows that, the audit offices who have at least one client entering the prestigious list, can charge higher audit fees in their already existing clients, in the year following the inclusion of the other client in the 100 MAC list. This is consistent with the assumption that audit offices gain reputation when a client of theirs becomes prestigious.

In columns (5) and (6) we include audit offices whose client exits the 100 MAC list in a specific year. We see that these offices do not experience a respective negative reputation shock as the coefficient is indeed negative, as it was expected, but not statistically significant. This indicates

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that potential clients value the entrance to the 100 MAC list but not the exit from the list.

## **3.6 Robustness Checks**

### **3.6.1 Propensity Score Matching**

We have already discussed that the covariate balance of the treated and control groups are not similar and this might bias our results. In order to make sure that this imbalance will not distort our results, we proceed into a propensity score matching (PSM) method to match on the observable characteristics, which include the variables used in regressions 3.2 and ???. We match on no replacement, requiring each observation in the treated group to be matched with the closest neighbour observation in the control group.

Table 6 shows the results after applying the PSM. Reputable audit offices are more likely to gain a new client in the year  $t+2$  and also charge higher audit fees to their other existing clients in the year after the audit office becomes prestigious. In columns (2) and (5) we see that there is no statistically significant change in the probability of gaining a new client and on audit fees, respectively, of an audit office whose client in question exits the 100 MAC list.

### **3.6.2 Audit-office level measurements**

In our main analysis we use the probability of gaining a new client (equation 3.1) and also the percentage change in audit fees of a particular non-prestigious client from year  $t$  to year  $t+1$  (equation 3.2). As an additional measurement, we try to capture the total effect at the audit office level rather at the firm level. To test therefore our first prediction we use as a dependent variable the change from year  $t+1$  to year  $t+2$  of the total number of audit office gains. We then use first differences in the control variables capturing the change in number of clients that entered the audit office after the positive reputation shock. This is a continues measurement constructed at the audit office level. To test our second prediction, we use the percentage change in the average audit fees of the continuing clients of an audit office. Results are presented in Table 7 and are consistent with our main analysis. Clients are willing to move to a prestigious

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audit office. Also, these audit offices face a higher bargaining power and can charge higher audit fees, on average, to their other clients, the year after another client firm enters the 100 MAC list.

### 3.6.3 Better quality auditors

Reputable auditors may be more inclined to take actions to protect their reputation, behaving thus in a different way from other auditors (Cao, L. A. Myers, and Omer 2012). Based on Wilson 1985, players are willing to compromise immediate consequences and benefits for long term benefits on their reputation. Hence, auditors trying to protect long term reputation benefits, might restrain themselves from being involved in activities that could damage their reputation (or engage in activities that protect and enhance positive reputation). This could result in lower market perceived audit quality and lose of clients.

We thus argue that highly reputable audit offices, being the ones that audit a client that now enters the 100 most admired companies' list, face more reputation costs in case of an adverse publicity, as compared to other audit offices. Hence, reputable audit offices will be more likely to protect their reputation and deliver better quality of audits to the other clients of the same audit office. To test our assumption we use the following regression:

$$\Delta Pr(Res = 1)_{r,t+1} = f(\beta_{0,t} + \beta_{i,1}Treated_{r,t} + \beta_{i,2}\Delta Controls_{i,r,t-1,t} + \alpha_t + \gamma_{industry} + \epsilon_{i,t}) \quad (3.3)$$

Our main dependent variable  $(Res_{i,t})^6$  measures the change in restatements from year t to year t+1. We use We choose restatement announcements as our main proxy because it captures GAAP corrections on violations and errors which eventually better measure audit quality (DeFond and Jieying Zhang 2014). Further, according to Aobdia 2019, restatement announcements significantly associate with actual business practices of regulators and auditors that measure audit quality. Table 8 presents the results. Audit offices that experience a positive reputation

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<sup>6</sup>We use restatement announcements in our main analysis as it better captures professional practices (Aobdia 2019).

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shock also provide better quality of audits to their other clients as evident by lower restatement announcements in the year following the inclusion of a client in the 100 MAC list. In columns (3) and (4) we present the results for the change in the restatement announcements from year  $t+1$  to  $t+2$ . We observe that the main result continues to exist.

### **3.6.4 Capacity constraint effect?**

Previous tests show that prestigious audit offices deliver better quality of audits, even in the year  $t+2$ , where it is evident that they attract more customers as shown in section 4.1. Based on J. R. Francis, Mehta, and W. Zhao 2017 audit offices that attract new customers face a capacity constraint effect and tend to deliver lower audit quality. As shown by our result in section 5.3, we do not observe such a capacity constraint effect. To make sure that this effect does not exist, we partition our sample into big and small offices. The reason for this is that, if indeed a capacity constraint effect is evident, smaller audit offices should suffer more by having more clients as compared to larger audit offices and consequently deliver lower audit quality. This is because, larger audit offices have more "greater capacity and staffing flexibility to absorb shocks" (J. R. Francis, Mehta, and W. Zhao 2017, p.1963). We then partition audit offices into quartiles based on the yearly audit fees an audit office earns. The audit offices that earn the highest audit fees (quartile 4) are considered as large offices and the audit offices that earn the lowest audit fees (quartile 1) are said to be small offices. As it is shown in Table 9 big offices do not show any statistically significant result but small offices show a negative and significant result. This shows that a capacity constraint effect is not evident in our study.

### **3.6.5 Multiple Offices**

We define audit offices as the combination of auditor and city. However, a concern may arise as many Big 4 auditors have more than one audit office in a particular city. Due to the fact that we cannot identify the address of each audit office that audits a particular client, we account for this problem by eliminating from our sample the Big 4 audit offices that have more than

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one audit office in the same city.<sup>7</sup> We present the results in Table 10 and we see that the main results continue to be the same. Reputable audit offices are more likely to gain new clients in year  $t+2$ . Also, client firms of prestigious auditors suffer higher audit fees in the year following the positive reputation event.

### **3.6.6 Probability of prestigious firms switching auditors**

So far, we have argued that audit offices whose existing client enters the 100 MAC list face a positive reputation shock with respect to their reputation and expertise. This would in turn cause more clients to move to that particular audit office. Further, audit offices' bargaining power increases resulting in higher audit fees earned by that particular audit office. This would be true if indeed prestigious firms continue contracting with that particular audit office sending therefore a positive signal regarding the expertise of the auditor. If, on the other hand prestigious firms decide to switch auditors in the year following their entrance in the 100 MAC list then other potential clients will perceive it as a negative signal making them reluctant to move to that audit office. In our next test, we check the probability of a prestigious firm switching to another audit office in the period  $t+1$  (with  $t$  being the period that the client firm becomes prestigious). We see in Table 11 that prestigious firms are less likely to switch to another audit office a year after they become prestigious. This in turn, sends an encouraging signal with regards to the audit office's expertise and performance.

### **3.6.7 Longer term effect of reputation shock**

In our main analysis, we have tested the probability of gaining a new client in the second year, after an audit office becomes prestigious. This indicates that the contagion effect appears in the second year mainly because of the difficulties associated with changing an auditor.

In this analysis we check whether the contagion effect persists up to the third year but also whether auditors can continue charging higher audit fees in the second or third year following the entrance of a client firm in the 100 MAC list. Results in Table 12 show that the positive

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<sup>7</sup>Appendix B indicates the cities where each Big 4 auditor has more than one audit office.

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reputation shock generated by the entrance in the 100 MAC list is only evident in the second year for the clients tests and in the first year for the fees test.

### **3.6.8 Gaining same-industry clients**

In our main analysis, we have tested the probability of gaining a new client if you are a prestigious client. We believe though that the client gain will be more prominent for clients that belong to the same industry as the prestigious client. This is because, if a client enters the 100 MAC list, it will be more visible to the same industry clients than for clients in other industries (Donelson, Ege, and Leiby 2019). In this section, we test whether reputable audit offices are more likely to gain clients that belong to the same industry as the prestigious client. However, we only have 190 observations of a client gain that belongs to the same industry as the prestigious client. Due to this, we perform this analysis in the robustness checks section and not in the main section. Table 13 indicates that prestigious audit offices are more likely to gain clients that belong to the same industry as the prestigious firm.

## **3.7 Conclusion**

Academic literature has mainly focused on how a negative reputation shock relating to the auditor's failure and collapse could impact the auditor's market perceived quality. Research on how city-level offices are affected by a positive reputation shock has only been documented by J. R. Francis, Mehta, and W. Zhao 2017 and focuses on industry specific reputation. In this study we focus on reputable firms could transmit reputation to the audit offices responsible for their audits.

Reputation and prestige is measured by the inclusion in the 100 MAC list. We find that audit offices auditing prestigious firms are regarded as more reputable which increases the ability of the audit office to attract new clients. This is attributed to a contagious effect from herding behavior, according to which other client firms believe that the prestigious firms possess an information advantage regarding that specific auditor.

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Our findings also show that these prestigious audit offices demand higher audit fees from their already existing clients as a result of higher bargaining power, effort and reputation protection. These audit offices try to protect their reputation by delivering better quality of audits now, as it is shown by the lower restatement announcement, leading to higher audit fees.

Our research contributes to the literature of audit offices showing how a positive reputation shock could (i) increase the ability of an audit office to attract new customers, (ii) adjust audit fees when you are considered a reputable audit office and (iii) cause a positive spillover effect to the other clients of the audit office that now enjoy better quality of audits shown by a lower rate of restatement announcements. We believe that our findings would be of interest to the regulators, the audit offices and their corresponding client firms as there seems to be a temporary reputation advantage for both the audit office and their clients.

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## Appendix A: Variables Definitions

Variables	Definition	Data source
<b>Dependent Variables:</b>		
<b>Client Gain</b>	Dummy variable that takes the value of one if the audit office gains a new client. Zero would be that the audit office has neither lost a client nor has it gained one.	Audit Analytics
$\Delta$ <b>Audit Fees</b> <sub>t,t+1</sub>	It is the percentage change in audit fees of a client firm from year t to year t+1.	Audit Analytics
<b>Rest</b> <sub>t,t+1</sub>	Dummy variable that takes the value of one if the year-end financial statements are restated in year t+1 and zero otherwise.	Audit Analytics
<b>Test Variable:</b>		
<b>Treated</b>	Dummy variable that takes the value of one if in a given year at least one of the audit office's clients enters the 100 MAC list.	Audit Analytics  Forbes Magazine
<b>Firm-Level Controls:</b>		
<b>BM</b>	Book Value of equity divided by the equity value of equity.	Compustat
<b>Size</b>	Natural log of total assets.	Compustat

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<b>Loss</b>	Dummy variable that takes the value of one if the company had a net Loss in the particular year, and zero otherwise.	Compustat
<b>Leverage</b>	Total debt divided by total equity.	Compustat
<b>Liability</b>	Total liabilities divided by total assets	Compustat
<b>Liquidity</b>	Current assets scaled by current liabilities	Compustat
<b>Return</b>	Percentage change in company's share price from year t-1 to year t.	Compustat
<b>ROA</b>	Net income scaled by total assets.	Compustat
<b>Quick</b>	Total current assets minus inventory, scaled by total current liabilities.	Compustat
<b>Inventory Receivables</b>	The summation of total inventories and total receivables, divided by total assets.	Compustat
<b>Sales Growth</b>	The year change of total sales.	Compustat
<b>Big4</b>	Dummy variable that takes the value of one if the company is audited by a Big-4 auditing company and zero otherwise.	Compustat
<b>ln_AF</b>	Natural log of the dollar amount audit fees a company pays to the auditors.	Audit Analytics
<b>ln_non_AF</b>	Natural log of the dollar amount of non audit fees a company pays to the auditors.	Audit Analytics
<b>Tenure</b>	Difference between the date an auditor was appointed in the company and the date the auditor was dismissed.	Audit Analytics
<b>Audit Office-Level Controls:</b>		

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<b>Influence</b>	Audit fees plus non-audit fees charged to a specific client, scaled by total audit fees charged by the auditor office.	Audit Analytics
<b>Number clients</b>	Number of clients audited by the auditor office in a year.	Audit Analytics
<b>National Industry Expert</b>	Dummy variable that takes the value of one if the company's auditor is the national industry leader and zero otherwise. The audit firm with the highest amount of audit fees within an industry and year is classified as the national industry expert.	Audit Analytics
<b>City Industry Expert</b>	Dummy variable that takes the value of one if the company's auditor is the city industry leader and zero otherwise. The audit firm with the highest amount of audit fees within an industry and city-year is classified as the city industry expert. City is defined by Audit Analytics	Audit Analytics
<b>Office Size</b>	Natural log of the total dollar amount of audit fees charged to all the clients in the portfolio within an auditor office. Audit Office locations are derived by Audit Analytics	Audit Analytics

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## Appendix B: Multiple Big 4 offices across US: 2

### 1. KPMG:

- Atlanta
- Dallas
- Denver
- Knoxville
- Montvale
- New York
- Phoenix
- San Diego

### 2. Deloitte:

- Deloitte
- San Francisco
- Washington
- Lake Mary
- Baltimore
- Austin

### 3. Ernst & Young:

- San Francisco
- San Jose
- Washington
- Jacksonville
- New Jersey

- 
- New York
  - Dallas
  - San Antonio
  - Seattle

**4. Pricewaterhouse Coopers:**

- Los Angeles
- Tampa
- Chicago
- New York

Table 3.1: Summary Statistics

Panel A: Summary Statistics

	Obs	mean	sd	min	e(p25)	e(p50)	e(p75)	max
Prestige	8123	0.088	0.283	0.000	0.000	0.000	0.000	1.000
Loss	8123	0.211	0.408	0.000	0.000	0.000	0.000	1.000
Liability	8113	0.589	0.267	0.014	0.431	0.581	0.716	6.159
Liquidity	7928	2.020	1.550	0.007	1.169	1.672	2.373	35.135
Sales Growth	8119	0.086	0.301	-1.000	-0.020	0.065	0.156	7.545
Big 4	8123	0.937	0.243	0.000	1.000	1.000	1.000	1.000
Leverage	6729	30.561	161.158	-35.211	0.859	1.762	4.063	1443.483
ROA	8123	0.022	0.186	-4.813	0.009	0.042	0.079	0.417
BM	8076	0.497	0.922	-8.145	0.281	0.465	0.709	5.056
Quick	7855	1832	3063.1	0.000	195.9	579.5	1763.9	13265.7
Inventory Receivable	8008	0.270	0.169	0.000	0.135	0.250	0.370	0.895
Size	8123	7.467	1.805	3.256	6.244	7.423	8.693	11.710
Return	8017	0.130	0.741	-0.910	-0.205	0.047	0.285	8.152
Ln_AF	8109	14.158	1.236	9.105	13.294	14.168	15.057	16.405
Ln_Non_AF	7880	12.849	1.623	8.619	11.735	12.882	13.970	16.692
Influence	8110	0.519	0.632	0.009	0.080	0.261	0.808	3.686
City Industry Leader	8123	0.651	0.477	0.000	0.000	1.000	1.000	1.000
National Industry Leader	8123	0.051	0.221	0.000	0.000	0.000	0.000	1.000
Office Size	8119	15.981	1.575	11.964	14.897	16.246	17.127	18.486
Tenure	8079	25.672	25.553	0.000	8.000	17.000	32.000	128.000
Number clients	8140	5.870	4.568	0.000	2.000	5.000	8.000	22.000
AF_byoffice	8140	21.400	26.300	0.000	2.908	11.300	27.300	122.000
Audit fees	8123	3.190	5.430	0.000	0.590	1.420	3.460	94.300
Restatement	6745	0.075	0.263	0.000	0.000	0.000	0.000	1.000

Panel B: Summary Statistics of Treated Vs Control audit offices

	Treated			Control			T-test
	Obs	mean	sd	Obs	mean	sd	
Loss	3013	0.180	0.384	5110	0.229	0.420	-0.049***
Liability	3012	0.601	0.267	5101	0.581	0.266	0.020***
Liquidity	2917	1.875	1.446	5011	2.104	1.601	-0.229***
Sales Growth	3013	0.083	0.298	5106	0.087	0.303	-0.004
Big 4	3013	0.997	0.055	5110	0.902	0.297	0.095***
Leverage	2564	19.948	119.556	4165	37.095	181.808	-17.147***
ROA	3013	0.036	0.148	5110 <sub>i</sub>	0.013	0.205	0.023***
BM	3005	0.429	0.858	5071 <sub>j0</sub>	0.536	0.956	-0.107***
Quick	2890	2869.3	3958.9	4965	1228.2	2175.4	1641.147***
Inventory Receivable	2979	0.253	0.160	5029	0.280	0.172	-0.027***
Size	3013	8.094	1.812	5110	7.098	1.696	0.997***
Return	2988	0.121	0.719	5029	0.135	0.753	-0.013
Ln_AF	3012	14.605	1.192	5097	13.894	1.184	0.710***
Ln_Non_AF	2950	13.243	1.680	4930	12.614	1.540	0.628***
Influence	3013	0.279	0.446	5097	0.661	0.681	-0.381***
City Industry Leader	3013	0.595	0.491	5110	0.684	0.465	-0.089***
National Industry Leader	3013	0.087	0.281	5110	0.031	0.172	0.056***
Office Size	3013	17.1	0.976	5106	15.3	1.5	1.9***
Tenure	3007	30.03	27.3	5072	23.1	24.1	6.948***
Number clients	3013	8.785	4.889	5127	4.157	3.339	4.628***
AF_byoffice	3013	40.8	31.7	5127	9.978	12.5	30.822***
Audit fees	3013	4.921	7.540	5110	2.172	3.244	2.749***
Restatement	2514	0.074	0.261	4231	0.076	0.264	-0.002

This table provides summary statistics for all the variables used in this analysis. Panel A provides summary statistics of both treated and control group of audit offices. Panel B shows the summary statistics after separating the sample between treated and control audit offices. All continuous variables are winsorized at the top 1% and bottom 99% percentiles of the distribution. All variables are as defined in Appendix A.

Table 3.2: Summary Statistics of Prestigious firm

	Obs	mean	sd	min	max
Loss	713	0.05	0.22	0.00	1.00
Liability	713	0.59	0.18	0.14	1.54
Liquidity	674	1.57	0.85	0.41	7.65
Sales Growth	713	0.07	0.18	-0.80	1.10
Big 4	713	0.99	0.07	0.00	1.00
Leverage	643	8.75	44.46	-0.95	921.96
ROA	713	0.08	0.06	-0.43	0.31
BM	713	0.38	0.29	-0.21	3.91
Quick	662	7012.50	4810.76	137.09	13265.72
Inventory Receivable	701	0.24	0.15	0.01	0.90
Size	713	9.81	1.26	6.50	11.71
Return	713	0.03	0.32	-0.91	1.90
Ln_AF	713	15.53	0.93	11.65	16.40
Ln_Non_AF	705	14.41	1.52	8.62	16.69
Tenure	713	43.48	32.12	0.00	128.00

This table provides summary statistics of the prestigious firms only. Prestigious firms are the ones that are included in the America's 100 most admired companies list. All continuous variables are winsorized at the top 1% and bottom 99% percentiles of the distribution. All variables are as defined in Appendix A.

Table 3.3: 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)	(21)	(22)
(1) Loss	1	0.192	-0.038	-0.266	-0.043	-0.193	-0.716	0.140	-0.196	-0.048	-0.187	-0.212	-0.140	-0.078	-0.023	0.005	-0.026	-0.074	-0.176	-0.022	-0.132	0.068
(2) Liability	0.167	1	-0.510	-0.136	0.117	-0.866	-0.281	-0.272	0.165	-0.041	0.215	-0.050	0.230	0.202	0.049	0.094	0.096	0.127	-0.002	0.055	0.009	0.046
(3) Liquidity	0.037	-0.431	1	0.025	-0.088	0.358	0.063	0.193	-0.142	0.332	-0.309	0.036	-0.235	-0.207	-0.055	-0.038	-0.119	-0.144	-0.045	-0.063	-0.136	0.006
(4) Sales Growth	-0.139	-0.083	0.003	1	0.010	0.105	0.285	-0.129	0.052	-0.002	0.061	0.115	0.027	-0.001	-0.010	-0.041	-0.023	0.011	0.033	-0.014	0.010	-0.018
(5) Big 4	-0.055	0.093	-0.096	0.003	1	-0.134	0.021	-0.102	0.268	-0.101	0.276	0.021	0.229	0.238	-0.233	0.018	0.054	0.326	0.250	0.295	0.067	-0.012
(6) Leverage	-0.002	-0.199	0.159	0.007	-0.094	1	0.298	0.226	-0.088	0.175	-0.182	0.057	-0.148	-0.153	-0.020	-0.085	-0.065	-0.092	0.041	-0.050	0.034	-0.042
(7) ROA	-0.485	-0.185	0.006	0.103	0.021	0.015	1	-0.375	0.224	0.019	0.189	0.169	0.168	0.084	0.027	-0.031	0.014	0.095	0.224	0.021	0.208	-0.109
(8) BM	0.008	-0.366	0.076	-0.023	-0.055	0.024	0.04	1	-0.221	0.135	-0.215	-0.202	-0.246	-0.192	-0.016	0.027	-0.072	-0.169	-0.120	-0.086	-0.162	0.032
(9) Quick	-0.129	0.069	-0.147	0.007	0.140	-0.072	0.096	-0.046	1	-0.115	0.936	-0.003	0.826	0.678	0.218	0.132	0.300	0.424	0.379	0.200	0.398	-0.041
(10) Inventory Receivable	-0.016	-0.084	0.157	-0.026	-0.116	0.029	0.047	0.100	-0.123	1	-0.357	0.027	-0.173	-0.153	0.004	0.031	-0.062	-0.140	-0.007	-0.062	-0.086	0.036
(11) Size	-0.209	0.203	-0.306	0.033	0.304	-0.145	0.150	-0.076	0.730	-0.371	1	-0.015	0.811	0.672	0.209	0.120	0.302	0.424	0.355	0.197	0.396	-0.050
(12) Return	-0.074	0.025	0.001	0.071	-0.003	-0.006	0.112	-0.059	-0.041	0.023	-0.064	1	-0.014	-0.025	-0.044	-0.014	-0.001	0.012	0.037	0.020	-0.024	0.005
(13) Ln_AF	-0.125	0.218	-0.246	-0.021	0.247	-0.106	0.103	-0.125	0.639	-0.208	0.806	-0.051	1	0.616	0.166	0.094	0.298	0.545	0.308	0.216	0.347	-0.009
(14) Ln_Non_AF	-0.064	0.161	-0.181	-0.017	0.241	-0.101	0.060	-0.082	0.556	-0.164	0.651	-0.048	0.605	1	0.332	0.114	0.271	0.283	0.290	0.164	0.294	-0.040
(15) Influence	0.011	0.023	-0.039	0.015	-0.182	-0.026	-0.013	0.024	0.143	-0.029	0.118	-0.044	0.023	0.289	1	0.329	0.157	-0.666	0.030	-0.716	0.136	-0.011
(16) City Industry Leader	0.009	0.060	-0.032	-0.033	0.035	-0.057	-0.001	0.007	0.164	0.041	0.126	-0.019	0.110	0.120	0.260	1	0.182	-0.214	-0.015	-0.306	0.092	0.011
(17) National Industry Leader	-0.016	0.067	-0.081	-0.017	0.056	-0.039	0.022	-0.030	0.356	-0.026	0.283	-0.009	0.285	0.268	0.105	0.170	1	0.131	0.122	0.044	0.254	0.007
(18) Office Size	-0.072	0.123	-0.135	-0.010	0.410	-0.056	0.072	-0.098	0.322	-0.130	0.436	-0.017	0.568	0.299	-0.602	-0.174	0.130	1	0.205	0.802	0.184	-0.007
(19) Tenure	-0.148	0.050	-0.090	-0.025	0.186	-0.065	0.112	-0.047	0.271	-0.006	0.347	-0.030	0.305	0.280	0.052	0.016	0.155	0.197	1	0.146	0.198	-0.072
(20) Number clients	-0.013	0.049	-0.050	-0.018	0.241	-0.034	0.030	-0.047	0.110	-0.037	0.157	-0.002	0.187	0.149	-0.517	-0.273	0.042	0.723	0.131	1	0.062	0.003
(21) Prestige	-0.120	0.005	-0.088	-0.020	0.073	-0.044	0.090	-0.040	0.513	-0.062	0.402	-0.042	0.345	0.301	0.089	0.105	0.255	0.177	0.217	0.059	1	-0.052
(22) Restatement	0.070	0.043	-0.019	0.003	-0.005	-0.011	-0.028	0.011	-0.047	0.021	-0.033	0.020	0.004	-0.023	-0.010	0.011	0.021	0.003	-0.048	0.000	-0.045	1

This table provides the correlation coefficients for all the variables used in this analysis. 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 or lower. All continuous variables are winsorized at the top 1% and bottom 99% percentiles of the distribution. All variables are as defined in Appendix A.

Table 3.4: Effect of prestigious firms on new client gains

Dependent Variable:	Gain <sub>t+1</sub>	Gain <sub>t+1</sub>	Gain <sub>t+1</sub>	Gain <sub>t+1</sub>	Gain <sub>t+2</sub>	Gain <sub>t+2</sub>	Gain <sub>t+2</sub>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Treated	-0.489** (-2.383)	-0.109 (-0.493)	-0.161 (-0.693)	-	0.444* (1.839)	0.496** (1.969)	-
Treated_exit	-	-	-	0.172 (0.748)	-	-	0.269 (1.078)
Big4	-	-0.390 (-1.390)	-0.325 (-1.040)	-0.305 (-0.975)	-0.258 (-0.871)	-0.295 (-0.895)	-0.311 (-0.948)
Liability	-	0.399 (1.635)	0.415 (1.396)	0.415 (1.396)	0.159 (0.465)	-6.26e-06 (-1.77e-05)	0.00180 (0.00512)
Liquidity	-	0.0515 (1.180)	0.0549 (1.190)	0.0540 (1.181)	-0.0112 (-0.199)	-0.00439 (-0.0838)	-0.00458 (-0.0858)
Sales Growth	-	0.0371 (0.178)	0.0510 (0.260)	0.0451 (0.233)	0.232 (1.429)	0.0346 (0.154)	0.0598 (0.256)
Leverage	-	0.0002 (0.709)	0.0003 (0.854)	0.0003 (0.878)	0.00062* (1.670)	0.0007* (1.750)	0.0007* (1.768)
ROA	-	-0.135 (-0.630)	-0.0635 (-0.252)	-0.0671 (-0.265)	0.0683 (0.269)	0.0753 (0.275)	0.0770 (0.284)
BM	-	0.0249 (0.388)	0.0626 (0.868)	0.0647 (0.889)	0.0287 (0.320)	0.0460 (0.487)	0.0423 (0.445)
Quick	-	-5.76e-06 (-0.141)	-1.97e-05 (-0.464)	-2.22e-05 (-0.524)	-6.47e-06 (-0.139)	-2.90e-05 (-0.600)	-2.72e-05 (-0.572)
Inventory Receivables	-	0.220 (0.457)	0.779 (1.302)	0.784 (1.309)	0.209 (0.406)	0.821 (1.277)	0.827 (1.294)
Size	-	-0.188** (-2.421)	-0.188** (-2.336)	-0.187** (-2.325)	-0.187** (-2.131)	-0.178* (-1.936)	-0.175* (-1.917)
Return	-	-0.0235 (-0.286)	-0.102 (-1.039)	-0.103 (-1.049)	-0.218* (-1.899)	-0.108 (-0.925)	-0.112 (-0.963)
Influence	-	0.0878 (0.564)	0.193 (1.106)	0.186 (1.065)	0.0975 (0.630)	0.142 (0.832)	0.147 (0.864)
City Industry Expert	-	0.118 (0.780)	0.240 (1.505)	0.251 (1.567)	0.0328 (0.204)	0.244 (1.460)	0.223 (1.361)
Rest	-	0.624*** (2.945)	0.526** (2.399)	0.527** (2.402)	0.623*** (2.699)	0.648*** (2.690)	0.660*** (2.743)
Office Size	-	0.0366 (0.492)	0.0755 (0.922)	0.0519 (0.622)	-0.106 (-1.230)	-0.0504 (-0.548)	-0.0327 (-0.358)
Tenure	-	-0.378** (-2.068)	-0.385** (-2.026)	-0.386** (-2.026)	-0.393** (-2.011)	-0.451** (-2.117)	-0.452** (-2.126)
Constant	-3.043*** (-48.20)	-2.299** (-2.024)	-2.864** (-2.077)	-2.549* (-1.822)	0.123 (0.0980)	-0.558 (-0.372)	-0.787 (-0.522)
Year FE	N	N	Y	Y	N	Y	Y
Industry FE	N	N	Y	Y	N	Y	Y
Observations	6,726	5,287	4,735	4,735	4,351	3,788	3,788
Pseudo R-squared	0.00269	0.0310	0.0594	0.0594	0.0436	0.0686	0.0667

This table shows the ability of an audit office to attract new clients after an existing client of the audit office enters the 100 MAC list. The dependent variable "Gain" takes the value of one if the audit office gains a new client and zero if the audit office neither gains a client nor it losses one. "Treated" is a dummy variable that takes the value of one if the audit office has a client firm that enters the 100 MAC list and zero if the client has neither exited the list nor it is included in the list. "Treated\_exit" is a dummy variable that takes the value of on if the audit office has a client that exits the 100 MAC list and zero if the client has neither entered the list nor it is included in the list. Column (1) - (4) show the probability of the audit office to gain a new client in the year following the entrance of another client in the 100 MAC list whereas columns (5)- (7) show the probability of gaining a new client after two years of the prestigious event. Fixed effects are as indicated. Clustering of standard errors is a two way adjustment on client firms and year. Z-statistics are reported in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 3.5: Effect of prestigious firms on audit pricing adjustments

Dependent Variable: $\Delta AuditFees_{t+1}$	(1)	(2)	(3)	(4)	(5)	(6)
Treated	0.064** (2.359)	0.090*** (2.846)	0.061* (1.891)	0.074** (2.248)	-	-
Treated_exit	-	-	-	-	-0.008 (-0.244)	-0.003 (-0.107)
$\Delta \ln_{non\_AF}$	-	0.012 (0.914)	0.017 (1.331)	0.015 (1.194)	0.017 (1.342)	0.015 (1.222)
$\Delta Loss$	-	-0.024 (-1.124)	-0.003 (-0.153)	0.003 (0.168)	-0.003 (-0.157)	0.003 (0.145)
$\Delta Liability$	-	-0.045 (-0.401)	0.092 (0.788)	0.093 (0.800)	0.096 (0.821)	0.096 (0.823)
$\Delta Big4$	-	-0.309* (-1.812)	0.295* (1.842)	0.341** (2.188)	0.299* (1.870)	0.343** (2.202)
$\Delta Liquidity$	-	-0.025 (-1.287)	-0.020 (-1.187)	-0.018 (-0.982)	-0.019 (-1.147)	-0.017 (-0.950)
$\Delta SalesGrowth$	-	0.027 (0.814)	0.014 (0.434)	0.046 (1.392)	0.015 (0.472)	0.048 (1.477)
$\Delta Leverage$	-	0.000 (1.132)	-0.000 (-0.929)	-0.000 (-0.099)	-0.000 (-0.874)	-0.000 (-0.021)
$\Delta ROA$	-	-0.026 (-0.509)	-0.076 (-1.362)	-0.048 (-0.894)	-0.077 (-1.376)	-0.049 (-0.925)
$\Delta BM$	-	-0.039*** (-3.164)	0.007 (0.673)	0.005 (0.450)	0.007 (0.681)	0.006 (0.478)
$\Delta Quick$	-	-0.000** (-2.519)	-0.000 (-1.312)	-0.000 (-1.160)	-0.000 (-1.425)	-0.000 (-1.316)
$\Delta InventoryReceivables$	-	0.656*** (2.820)	0.126 (0.547)	0.173 (0.771)	0.131 (0.572)	0.176 (0.787)
$\Delta Size$	-	0.313*** (4.707)	0.081 (1.145)	0.072 (1.041)	0.086 (1.214)	0.076 (1.102)
$\Delta Return$	-	0.013 (1.307)	-0.011 (-1.086)	-0.015 (-1.506)	-0.011 (-1.108)	-0.015 (-1.527)
$\Delta Influence$	-	-0.022 (-0.561)	0.004 (0.088)	-0.024 (-0.582)	0.004 (0.081)	-0.025 (-0.599)
$\Delta CityIndustryExpert$	-	-0.032 (-0.818)	-0.035 (-0.938)	-0.026 (-0.678)	-0.035 (-0.927)	-0.026 (-0.670)
$\Delta NationalIndustryExpert$	-	-0.088 (-1.263)	-0.076 (-1.112)	-0.102 (-1.499)	-0.084 (-1.225)	-0.110 (-1.585)
$\Delta OfficeSize$	-	0.085*** (3.207)	-0.073** (-2.148)	-0.075** (-2.326)	-0.073** (-2.135)	-0.074** (-2.300)
Firm FE	N	N	Y	Y	Y	Y
Year FE	N	N	N	Y	N	Y
Year - Industry FE	N	N	Y	N	Y	N
Audit Office FE	N	N	Y	Y	Y	Y
Observations	6,092	3,641	3,481	3,504	3,481	3,504
Adjusted R-squared	0.001	0.024	0.319	0.268	0.318	0.266

This table shows the adjustment on audit pricing from the prestigious audit offices, i.e. audit offices that have a client that enters the 100 MAC list. The dependent variable is the change in audit fees from year  $t$  to year  $t+1$  of non prestigious clients. "Treated" is a dummy variable that takes the value of one if the audit office has a client firm that enters the 100 MAC list and zero if the client has neither exited the list nor it is included in the list. "Treated\_exit" is a dummy variable that takes the value of one if the audit office has a client that exits the 100 MAC list and zero if the client has neither entered the list nor it is included in the list. Fixed effects are as indicated. Clustering of standard errors is a two way adjustment on client firms and year. T-statistics are reported in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 3.6: Propensity Score Matching

Dependent Variables:	Gain <sub>t+2</sub>		ΔAF <sub>t,t+1</sub>		
	(1)	(2)	(3)	(4)	(5)
Treated	0.523*	-	0.065**	0.076**	-
	(1.726)		(2.025)	(2.378)	
Treated_exit	-	0.265	-	-	-0.007
		(0.903)			(-0.243)
Controls	Y	Y	Y	Y	Y
Firm FE	N	N	Y	Y	Y
Year FE	Y	Y	N	N	N
Industry FE	Y	Y	N	N	N
Year-Industry FE	N	N	Y	Y	Y
Audit Office FE	N	N	Y	N	Y
Observations	2,459	2,459	2,377	2,384	2,377
Pseudo R-squared	0.0662	0.0633	0.367	0.367	0.365

This table shows the main results presented in tables 4 and 5 after applying a propensity score matching. We match on the closest neighbour observation on no replacement. The dependent variable in columns (1) and (2) is "Gain" that takes the value of one if the audit office gains a new client and zero if the audit office neither gains a client nor it losses one. The dependent variable in columns (3) - (5) is the change in audit fees from year t to year t+1 of non prestigious clients. "Treated" is a dummy variable that takes the value of one if the audit office has a client firm that enters the 100 MAC list and zero if the client has neither exited the list nor it is included in the list. "Treated\_exit" is a dummy variable that takes the value of one if the audit office has a client that exits the 100 MAC list and zero if the client has neither entered the list nor it is included in the list. Fixed effects are as indicated. Clustering of standard errors is a two way adjustment on client firms and year. Z- statistics and t-statistics are reported in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 3.7: Audit-office level tests

Dependent Variables:	$\Delta Gain_{t+1,t+2}$					$\Delta AuditFees_{t,t+1}$				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Treated	0.312*** (10.107)	0.065*** (2.675)	0.077* (1.884)	0.085** (2.200)	-	-	0.092** (1.986)	0.067 (1.362)	-	-
Treated_exit	-	-	-	-	-0.014 (-0.366)	-0.009 (-0.261)	-	-	-0.149*** (-3.465)	-0.164*** (-3.405)
$\Delta Controls$	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	N	N	N	Y	N	Y	N	Y	Y	N
Year - Industry FE	N	N	Y	N	Y	N	Y	N	N	Y
Audit Office FE	N	N	N	N	N	N	Y	Y	Y	Y

This table shows the effect of having a client entering the 100 MAC list at the audit office level. The dependent variable in columns (1) - (6) is the change in the number of clients an audit office gains from year t+1 to year t+2. The dependent variable in columns (7) - (10) is the change in the average audit fees an audit office earns from year t to year t+1. "Treated" is a dummy variable that takes the value of one if the audit office has a client firm that enters the 100 MAC list and zero if the client has neither exited the list nor it is included in the list. "Treated\_exit" is a dummy variable that takes the value of one if the audit office has a client that exits the 100 MAC list and zero if the client has neither entered the list nor it is included in the list. Fixed effects are as indicated. Clustering of standard errors is a two way adjustment on client firms and year. Z- statistics and t-statistics are reported in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 3.8: Effect of prestigious firms on other clients audit quality - Restatements

Dependent Variable:	$\Delta Rest_{t+1}$	$\Delta Rest_{t+1}$	$\Delta Rest_{t+2}$	$\Delta Rest_{t+2}$
	(1)	(2)	(3)	(4)
Treated	-0.515* (-1.744)	-	-0.602** (-2.339)	-
Treated_exit	-	-0.650* (-1.947)	-	-0.283 (-1.170)
$\Delta Controls$	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y
Observations	2,514	2,514	2,040	2,040
Pseudo R-squared	0.0898	0.0908	0.0860	0.0829

This table shows the effect of having a prestigious client on the subsequent audit quality which is proxied by the restatement announcements. The dependent variable in columns (1) and (2) ((3) and (4)) takes the value of one if the year-end financial statements are restated in year t+1 (year t+2) and zero otherwise. "Treated" is a dummy variable that takes the value of one if the audit office has a client firm that enters the 100 MAC list and zero if the client has neither exited the list nor it is included in the list. "Treated\_exit" is a dummy variable that takes the value of one if the audit office has a client that exits the 100 MAC list and zero if the client has neither entered the list nor it is included in the list. Fixed effects are as indicated. Clustering of standard errors is a two way adjustment on client firms and audit office level. Z-statistics are reported in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 3.9: Capacity Constraints of audit offices

Dependent Variable: $\Delta Rest_{t+1}$	Big Offices		Small Offices	
	(1)	(2)	(3)	(4)
Treated	-1.058 (-1.322)	-	-1.869* (-1.841)	-
Treated_exit	-	0.391 (0.771)	-	-0.374 (-0.238)
$\Delta Controls$	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Insustry FE	Y	Y	Y	Y
Observations	434	434	451	451
Pseudo R-squared	0.240	0.229	0.217	0.213

This table shows whether there are any capacity constraints emerging from attracting more client firms. The sample is separated into quartiles based on the audit fees an audit office earns. Big (small) offices are those that belong to quartile 4 (1). The dependent variable takes the value of one if the year-end financial statements are restated in year t+1 and zero otherwise. "Treated" is a dummy variable that takes the value of one if the audit office has a client firm that enters the 100 MAC list and zero if the client has neither exited the list nor it is included in the list. "Treated\_exit" is a dummy variable that takes the value of one if the audit office has a client that exits the 100 MAC list and zero if the client has neither entered the list nor it is included in the list. Fixed effects are as indicated. Clustering of standard errors is a two way adjustment on client firms and audit office level. Z-statistics are reported in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 3.10: Multiple Offices

Dependent Variables:	Gain <sub>t+2</sub>		ΔAF <sub>t,t+1</sub>	
	(1)	(2)	(3)	(4)
Treated	0.716** (2.564)	-	0.073* (1.754)	-
Treated_exit	-	0.0222 (0.0685)	-	0.044 (1.176)
Controls	Y	Y	Y	Y
Firm FE	N	N	Y	Y
Year FE	Y	Y	Y	Y
Industry FE	Y	Y	N	N
Observations	3,210	3,210	3,076	3,076
Pseudo R-squared	0.0831	0.0786	0.211	0.210

This table replicates the results in Tables 4 and 5 after eliminating the big 4 audit offices that have more than one audit office in a city. The dependent variable in columns (1) and (2) is "Gain" that takes the value of one if the audit office gains a new client in year t+2 and zero if the audit office neither gains a client nor it losses one. The dependent variable in columns (3) and (4) is the change in audit fees from year t to year t+1 of non prestigious clients. "Treated" is a dummy variable that takes the value of one if the audit office has a client firm that enters the 100 MAC list and zero if the client has neither exited the list nor it is included in the list. "Treated\_exit" is a dummy variable that takes the value of on if the audit office has a client that exits the 100 MAC list and zero if the client has neither entered the list nor it is included in the list. Fixed effects are as indicated. Clustering of standard errors is a two way adjustment on client firms and year. Z- statistics and t-statistics are reported in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 3.11: Probability of prestigious firms switching their auditor

Dependent Variable: Switch	(1)	(2)	(3)
Prestige	-0.229** (-2.213)	0.0544 (0.415)	-0.502* (-1.813)
Controls	N	Y	Y
Year FE	N	N	Y
Industry FE	N	N	Y
Observations	8,123	6,199	1,217
Pseudo R2	0.000623	0.0253	0.133

This table shows shows the probability of a prestigious firm changing its auditor in the year following their entrance in the 100 MAC list. Fixed effects are as indicated. Clustering of standard errors is a two way adjustment on client firms and audit office level. Z-statistics are reported in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 3.12: Longer term effect of prestigious audit offices

Dependent Variables:	Gain <sub>t+3</sub>	$\Delta$ AuditFees <sub>t+2</sub>
Treated	-0.470 (-1.52)	-0.032 (-0.998)
Controls	Y	Y
Firm FE	N	Y
Year FE	Y	N
Industry FE	Y	N
Year-Industry FE	N	Y
Audit Office FE	N	Y
Observations	3,088	2,861
Adjusted R-squared	0.138	0.215

This table shows the longer term effects of having a client entering the 100 MAC list. The dependent variable in column (1) is "Gain" that takes the value of one if the audit office gains a new client in year t+3 and zero if the audit office neither gains a client nor it losses one. The dependent variable in column (2) is the change in audit fees from year t+1 to year t+2 of non prestigious clients. "Treated" is a dummy variable that takes the value of one if the audit office has a client firm that enters the 100 MAC list and zero if the client has neither exited the list nor it is included in the list. Fixed effects are as indicated. Clustering of standard errors is a two way adjustment on client firms and year. Z- statistics and t- statistics are reported in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 3.13: Gaining a client in the same industry as prestigious client

Dependent Variable: Gain_industry	(1)	(2)	(3)	(4)
Treated <sub>t-1</sub>	2.348*** (3.360)	1.339** (2.016)		
Treated_exit <sub>t-1</sub>			-0.131 (-0.203)	0.886 (1.016)
Controls	Y	Y	Y	Y
Year FE	N	Y	N	Y
Industry FE	N	Y	N	Y
Observations	3,188	1,130	3,188	1,130
Pseudo R-squared	0.297	0.368	0.228	0.356

This table shows the ability of an audit office to attract new clients that belong to the same industry as the prestigious client. The dependent variable "Gain\_industry" takes the value of one if the audit office gains a new client that belongs to the same industry as the prestigious client and zero if the audit office neither gains a client nor it losses one. "Treated" is a dummy variable that takes the value of one if the audit office has a client firm that enters the 100 MAC list and zero if the client has neither exited the list nor it is included in the list. "Treated\_exit" is a dummy variable that takes the value of on if the audit office has a client that exits the 100 MAC list and zero if the client has neither entered the list nor it is included in the list. Fixed effects are as indicated. Clustering of standard errors is a two way adjustment on client firms and year. Z-statistics are reported in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

# Chapter 4

## Effects of the Dark Triad Personality on the Relation between Audit Rotation and Audit Honesty

### 4.1 Introduction

Audit quality is the cornerstone of the audit practice for ensuring the integrity of the information available to the public (SEC, 2010; AICPA, 1999). Audit quality requires that honest auditors report any misrepresentation communicated in the financial statements by the managers, i.e. they must “report the breach” in words of DeAngelo 1981 (p.186). Thus, audit quality not only means that auditors are capable of discovering any fraud or material misstatement but also that they must report it. Prior research in auditing has linked this last issue to the independence of auditors: A good-quality audit report is the outcome of both “technically competent and independent audit process” (Citron and Taffler 1992, p. 344). For instance, in the laboratory, audit quality proofs can be ameliorated when auditors act honestly (e.g., Fischbacher and Stefani 2007).

However, Bazerman, Morgan, and Loewenstein 1997 claimed that is unrealistic to expect that auditors, including those of high integrity, remain impartial and objective to the interests of

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companies that hire them. Twenty years later, in the post-Enron era, Buffett and Clark 2006 addressed that auditors “tend to kowtow instead to the managers who choose them and dole out their pay. Whose bread I eat, his song I sing” (Buffett and Clark 2006). Similar thoughts are shared by J. A. Moore 2006, Bazerman and D. Moore 2011, Singer and Jing Zhang 2018. Nowadays, we can read in professional journals like “The CPA”, and more generalist journals like “The Economist” or “The Guardian” that audit independence is highly questioned. In fact, the Guardian ( May, 2018 ) claims that KPMG auditors did not follow any extensive supervising as to how the bank (audited by them) was setting aside for losses when KPMG "was pocketing handsome consulting income – £45m on top of its £56m audit fees over about seven years – and the junior bean counters’ concerns were not followed up by their superiors.”

At the core of this independence’s debate it is addressed that rotation could be a way for enhancing audit quality, by discouraging the formation of close relations between auditors and their clients (SEC, 2002). Considerable audit behavioral and empirical research has tested the benefits of a lengthy auditor-client tenure in audit quality, yielding though to mixed results (Bowlin, Hobson, and Piercey 2015). Support is found on claims in that longer audit tenure allows participants in the role of auditors to form close relationship with their clients threatening eventually their independence(Dopuch, King, and Schwartz 2001). For instance, audit rotation is negatively associated with real earnings management encouraging therefore audit independence (Ernstberger et al. 2017). Field researchers likeFiolleau et al. 2013 andGhosh and Moon 2005 find that audit rotation harms independence of auditors. Surveyed auditors also recognize that tenure facilitates their objectivity (Bamber and Iyer 2007). Empirical results also convey the opinion that longer audit tenure improves auditor independence and consequently audit quality. A longer relationship between the client-firm and the auditor leads to more efficient investment decisions by their clients through higher reporting quality (Bae et al. 2017). A third strand of research adds no evidence to this controversy in that longer audit tenure is associated with lower audit quality (J. N. Myers, L. A. Myers, and Omer 2003; V. E. Johnson, Khurana, and Reynolds 2002). Auditors’ impulse to align their interests with their clients’ tends to disappear at the year of auditor’s rotation (Cameran, Prencipe, and Trombetta 2016).

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In summary, the auditing literature is not conclusive about implications of rotation on honest reporting.

The psychology of the auditor is a relevant trait here because individuals (depending on their personality trait) are susceptible to interpret financial data in a self-serving way (Bazerman, Morgan, and Loewenstein 1997, Bazerman and D. Moore 2011). A large body of literature in psychology and ethics refers to three personality types: Machiavellianism, psychopathy and narcissism (Dark Triad traits) that positively influence dishonesty behavior (e.g., Harrison, Summers, and Mennecke 2018). We argue that these Dark Triad traits reduce the effectiveness of rotation for boosting audit quality because they represent a higher personal predisposition to interpret ambiguous evidence with regard to financial data in a more dishonest way.

To unravel some of the consequences surrounding audit rotation and subsequent audit dishonesty; we perform an experiment which requires participants to impersonate the role of an auditor who faces a high or low likelihood of renovation. The auditor must report his/her audit opinion (unqualified, qualified, adverse, or disclaimer) in a laboratory setting in which their clients are involved in earnings misstatement. We manipulate the probability the public detects their misrepresentation (high versus low probability of detection). Participants find themselves in an economic and ethical dilemma because reporting honestly carries out the risk that their clients do not renovate their contract but at the same time auditor benefit from maintaining their reputation.

Contrary to prior experimental evidence, results show that auditor rotation does not conduct to raise auditor's decisions on honesty. The same human nature is the one that plays the detrimental role. Under a high likelihood of rotation, those participants in the role of auditors with higher Dark Triad (HDT) traits, concretely the ones with higher levels of psychopathy, issue a less favorable audit opinion for the firm (i.e., more honest) than the other participants. However, all participants, no matter their traits, follow a similar pattern under a low likelihood of rotation.

This paper contributes to the literature on auditing, and specifically on audit quality and audit rotation. This experimental result can shed a contemporary light on the contentious tension as

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to whether audit rotation actually has positive (Dopuch, King, and Schwartz 2001), negative (Bamber and Iyer 2007) or no implications at all (Shockley 1981) on audit quality. Most of the prior experimental literature (Bowlin, Hobson, and Piercey 2015; Dopuch, King, and Schwartz 2001) tests the settings of retention versus rotation and their impact on audit honesty. In our experiment, we deviate from settings entailing certainty to settings involved uncertainty and in particular a setting consisting of two experimental conditions: low likelihood of rotation and high likelihood of rotation. Our results show that uncertain situations do not create the same incentives for audit dishonesty as a certain retention or rotation setting would have created. Furthermore, we complement prior literature that focuses on the implications of audit rotation on audit quality in isolation (V. E. Johnson, Khurana, and Reynolds 2002; J. N. Myers, L. A. Myers, and Omer 2003; Fiolleau et al. 2013), by demonstrating that the positive effects of a high likelihood of audit rotation on audit quality are mediated by the psychological traits of each auditor (Bazerman, Morgan, and Loewenstein 1997). We also add to the literature on Dark Triad personality. Much of the existing literature, both in the disciplines of psychology and business, claims that HDT individuals are portrayed by a fraudulent behavior and exploitative tendencies. Our results offer a framework for the exploration of the "bright side" of HDT auditors: There are not significant ethical differences under low likelihood of rotation between the HDT and low Dark triad (LDT) groups. A high likelihood of confronting a rotation regime though causes HDT to act more honestly, indicating that a non-independent behaviour is merely propelled by short-term economic incentives because they are equally inclined towards dishonesty as LDT when they confront a low-likelihood of rotation. Implications of our experiment can be found both in the corporate and regulatory environments. First, audit firms may decide to invest on training, auditing procedures, work in team, and incentive systems, which will eventually ameliorate the dark Triad's personality effect promoting thus honesty in audit practice. In addition, employers can determine particular dark Triad traits to guide differently their auditors in their future careers through advice and direction. Second, rather than identifying audit rotation as a onetime shot effect in auditors' reporting decisions, regulatory bodies may receive information on the fact that the advice for limiting rotation, e.g., mandatory rotation, may be

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effective only for a particular psychological profile of auditors: LDT. Policies targeting on the economic incentives could be more effective to discipline LDT auditors.

This paper proceeds as follows. Section 2 discusses the relevant literature and the development of hypotheses. Section 3 describes the method and the design used in this experiment. Section 4 presents the results, and Section 5 concludes.

## 4.2 Literature Review and Development of Hypotheses

We frame audit quality as an outcome of auditor independence as it guarantees the property of competence by informing participants regarding the misstatement in the financial statements. Auditors must “decide issues in an unbiased and objective manner, even when the auditor’s decisions may be against the interests of management of an audit client” (SEC, 2010). However, the post-Enron crisis and the recent turmoil in the financial markets casts doubts regarding auditor’s independence. The lack of honesty of auditors has received significant attention from the accounting regulators (Benston 2006), remarkably since the Enron scandal (Healy and Palepu 2003). Big 4 accounting firms are mentioned in accounting scandals. For instance, Ernst Young and KPMG are charged with 9.3 and 4.7 million dollars respectively to settle charges concerning the firm’s audit partners violating the property of independence between the audit firm and its clients (SEC, 2016; Reuters, 2016). However, in 2018, fifteen years after scandals, in the post-financial crisis, economic journals denounce that The Big4 “are free to make profit without fearing serious consequences of their abuses, whether it is the exploitation of tax laws, slanted consultancy advice or overlooking financial crime.”( Guardian, May 2018 ).<sup>1</sup>

In summary, after scandals, capital markets, professional auditing bodies and regulators have taken an active role for providing solutions that foster honesty in audit reports but they seem to be ineffective. One of the amendments proposed by the Securities and Exchange Commission (SEC) in 2002 involved rules constraining auditors from providing certain types of non-audit services to their clients restricting thus the formation of close relationships between auditors

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<sup>1</sup><https://www.theguardian.com/news/2018/may/29/the-financial-scandal-no-one-is-talking->

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and their clients. As far as tenure is concerned, the Security Exchanges Commission (SEC) has approved changes of the Public Company Accounting Oversight Board (PCAOB) in the audit's reports considering the disclosure of audit tenure in that auditor's reports should disclose the audit tenure beginning from the year the auditor began his service uninterruptedly (SEC, 2017). Also, audit tenure is a matter of enduring interest for the European Union (E.U.) which makes mandatory a seven-year audit rotation followed by a three-year cooling-off period. The E.U.-audit legislation law became effective in June 2016. In contrast to the E.U., the U.S. congress did not support the PCAOB's proposal for mandatory audit firm rotation (U.S. House of Representatives, 2013).

In spite of the anticipated positive effects on honesty, the effectiveness of actions on tenure are under debate. The debate is whether accounting policies should focus on the reinforcement of auditor's knowledge on the client firm by reducing rotation, or target auditor independence by increasing rotation (Bamber and Iyer 2007), and, thus, honesty in the financial reporting. Further knowledge is a guarantee of technical audit quality because longer tenures buttress auditor's knowledge, but this longer tenure, in itself, corrodes auditor independence, as showed by Dopuch, King, and Schwartz 2001. In their laboratory experiment, participants in the role of auditors are more willing to issue favorable reports when there is a setting with longer engagement with the client indicating that audit opinions suffer a bias towards clients' preferences. Repeated audit engagements are associated with lower costs allowing auditors to extract economic rents. A long-run relationship between auditors and their clients undermines auditors' independence. Auditors are more inclined to agree with the financial reporting decisions of managers when the engagement they have with the client is at risk (Farmer, Rittenberg, and Gregoiy M Trompeter 1987). Archival studies also show that audit tenure impairs audit quality. Garven, Beck, and Parsons 2018 find that longer audit tenure tends to be associated with an under-reporting of fundraising and administrative expenses in non-profit organizations. Looking at the effects of the SOX 404; Y. Zhao, Bedard, and Hoitash 2017 identify that shorter tenure is directly linked to increased audit effort. Carey and Simnett 2006 identify that auditors that have a longer relationship with their client are less inclined to issue a going-concern opinion

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and just beat/meet earnings benchmarks, which is associated with a corrosion in audit quality. Auditors may establish friendly relationships with their clients that erode auditor's objectivity and professional skepticism, which eventually undermines audit quality. Audit-client relationships though, can establish economic bonds which are translated into higher audit fees. This bond though tends to increase over time challenging auditor independence (Ghosh and Siriviriyakul 2018). Particularly, audit firms tend to use less conservative accounting (in terms of reported levels of earnings) on the years before their re-appointment by the same client firm. However, this trend reverses at the year of the audit rotation (Cameran, Prencipe, and Trombetta 2016). Moreover, following the demise of Arthur Andersen in 2001, Singer and Jing Zhang 2018 show that longer audit tenure impairs the timely discovery of misstatements. Longer audit tenure is not however solely a signal of lower audit quality to the company but to the public as well: the market reacts positively to a dismissal decision of an auditor with longer tenure (Tanyi and Roland 2017).

Taking into consideration the above literature we assert that the expectation of a longer audit tenure discourages honesty leading us to the following hypothesis:

*H1: Auditors act more dishonestly with low likelihood of rotation.*

According to the economic theories, e.g., agency theory, auditors (e.g., agents) can be dishonest in their reporting when there are benefits from doing so as well as asymmetries of information that let them to act with impunity (Baiman 1982). Under the lens of agency theory, auditors are egoist, neutral or well averse to risk, and averse to effort. These preferences shape their utilitarian functions and based on them they act opportunistically. This translates into individuals with no economic incentives for honesty and who would continue lying as long as it serves their personal interests. The seminal research of Baiman and Lewis 1989 identified that each individual has a threshold of lying. Up until the personal threshold, each one reports honestly but once this threshold is achieved, reporting is based on the maximization of personal interests. Earlier literature though identifies that there is a trade-off between the benefits and costs of being dishonest (e.g. Luft 1997). Specifically, individuals are willing to

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sacrifice part of their wealth in order to report honestly or partially honestly (e.g., Evans III et al. 2001). In fact, they are disposed to forego almost fifty per cent of their potential benefits to act ethically. Remarkably, participants in the role of auditors display more honest reporting than the one suggested by traditional economics (Evans III et al. 2001). This opens the door to the consideration that the position of participants concerning honest reporting can differ across personalities when they confront the economic and ethical dilemma between receiving higher payoffs, or serving other types of personal interests.

Paulhus and Williams 2002 have proposed the term “Dark Triad” (DT) that refers to a psychological profile of individuals, namely psychopathy, narcissism and Machiavellianism. DT present both negative and positive traits. The positive traits, often called the “bright side”, explain why this kind of individuals succeeds in corporate environments (Judge, Piccolo, and Kosalka 2009) and has positive effects on the well-being of others (Aghababaei and Błachnio 2015). This “bright side” is associated to careerism and subordinates’ well-being (Volmer, Koch, and Göritz 2016).

Negative aspects are related with an adverse effect on honesty and humility (Muris et al. 2017). The desire of individuals who exhibit HDT traits is associated to status dominance and social power (Vedel and Thomsen 2017). Psychopaths show lack of self-control and callousness (Cleckley, 1941/1976).<sup>2</sup> They are also prone to deception and act dishonestly just to be compensated immediately (D. N. Jones and Paulhus 2011). Psychopathy is a factor that explains careerism in that individuals expect to succeed in a professional environment regardless of their performance (Chiaburu, Muñoz, and Gardner 2013).

Machiavellianism predicts eagerness for triumphing in the corporate world (Judge, Piccolo, and Kosalka 2009). They manipulate and exploit others (Christie and Geis 1968; D. N. Jones and Paulhus 2014), and present a strategic-calculating orientation (D. N. Jones and Paulhus 2014). They are cautious on their reputation and they are interested in their long-term prosperity. For that, they plan ahead, and build alliances (D. N. Jones and Paulhus 2011). Narcissists on the other hand need to buttress their ego (Morf and Rhodewalt 2001). They overestimate them-

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<sup>2</sup>Cleckley, H. (1976). *The mask of sanity* (5th ed.). St. Louis, MO: Mosby. (Original work published 1941)

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selves having the impression they are competent of everything even when they lack of skills for some tasks (Paulhus and Williams 2002). All these effects derive on lack of honesty and humility. Furthermore, authors like Hodson et al. 2018 consider that DT traits are not different from honesty-humility traits.

In the laboratory, participants who portray evidence of Machiavellianism, narcissism or psychopathy are more likely to act dishonestly compared to other participants in the laboratory (Ashton, K. Lee, and Son 2000; Muris et al. 2017). The arguments of K. Lee et al. 2013 regarding peer- and self-report reinforces these results. Remarkably, Machiavellianism and psychopathy present stronger negative associations with dishonesty than narcissism. They are particularly linked to falsehood whereas narcissism is related to arrogance and greed (Aghababaei, Mohammadtabar, and Saffarinia 2014; Jonason and McCain 2012).

Recent accounting and auditing academia have analyzed the relationship between (dis)honesty and the dark triad. Stevens, Deuling, and Armenakis 2012 notice that such a connection becomes interesting because of the increasing evidence of “successful psychopaths” in the business environment. Majors 2016 finds that HDT managers report more aggressively than LDT managers and are indifferent “to the harm they cause to the others”(p. 974). For instance, Chief Financial managers (CFOs) that score high on narcissism, tend to report higher accruals, are more likely to engage in real earnings management, and more likely to report higher misstatements for a rise to the top (Ham et al. 2017). Auditors deem narcissism of the others as a trait that negatively influences managers’ morality: at higher levels of narcissism, auditors anticipate higher fraud risk (E. N. Johnson et al. 2013). This may be a case of looking at the speck in someone else’s eye and failing to see the plank in our own eye. Auditors could share the same personality traits. Correspondingly, they may follow the same pattern: auditors who are psychopaths, Machiavellians or narcissists could be more likely to be involved in fraud.

In our first hypothesis, we claim that auditors are more prone to act dishonestly under expectations of low -rotation regime than under expectations oh high rotation. Drawing upon DT’s line of research, we claim that DT traits drive judgements of auditors when they face low and high likelihood of rotation.

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**DarK Triad and low-rotation:**

Under low-rotation regime, auditors develop close relationships with their clients causing bias in their decisions to satisfy their client's interests. We argue that auditors that exhibit high levels of at least one of the personality characteristics entailed in the DT term will be more inclined to be dishonest under low-probability of rotation. A common aspect entailed in that personality is "careerism", then, HDT participants would be more willing to satisfy their clients' interests for a "rise to the top": a possible renewal of the auditor's contract increases the probability of better career prospects especially if auditors ensure their clients' interests. Buttressing this expectation, theory identifies that Dark Triad participants are associated with opportunistic behavior (Bereczkei et al. 2013). On the other hand, we posit that LDT auditors will be more inclined to act more honestly under low-rotation regime as they present lower levels of the opportunistic and dishonesty behavior entailed in the HDT participants.

**DarK Triad and high-rotation:**

In a high-rotation regime, the incentives for better career outcomes cease to exist. What matters now is to protect their reputation in order to be able to establish future clients. This leads us to hypothesize that participants that exhibit higher levels of at least one of the personality traits will be disciplined under a rotation regime and will be motivated to act more honestly.

To summarize, the inclination towards acting more honestly under a high rotation regime may be more pronounced for HDT than for LDT auditors. This is because, LDT participants will act honestly under low-rotation regime and thus they will show less reaction to the disciplin effects of a high-probability of rotation.

This leads us to our second hypothesis:

*H2: Auditors' impulse towards reporting honestly under a high-probability of rotation will be more pronounced for HDT than LDT.*

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## 4.3 Experimental Setting

In our experimental setting, undergraduate students enrolled in accounting subjects voluntarily embody the role of auditors who must provide an audit opinion regarding the financial position of the company. We assign participants to two groups of treatment: high versus low probability of renewal of the contract (70% and 30% to represent low rotation versus high rotation). We manipulate their behaviors by providing them a different probability that misrepresentations in the financial statements become known to the public in two conditions high (8%) versus low probability of detection (20%).

--- Insert table 1 here ---

Table 1 displays the different probabilities that may confront one participant in the experiment on each condition. For instance, the first condition (A) means that the probability that the participant's contract is renewed, and the probability her eventual misstatement is discovered by the public are 70% and 20%, respectively.

### 4.3.1 Design and Procedure

We use a 2x2 between-groups factorial design with one participant in the role of auditor randomly assigned to one of the two experimental groups: low or high probability of rotation under two different conditions: low or high detection of the misstatement. Participants have to decide on their audit opinions. We manipulate their behavior by communicating to them that the public may discover this misrepresentation. The discovery of it carries reputation costs.

We recruit 171 undergraduate students<sup>3</sup> of accounting from a large AASB-accredited university in Europe during the academic year 2017-2018. All participants have knowledge on accounting in general and auditing in particular. Seventy-two participants were in the "more susceptible to rotate" group (high rotation hereafter) and sixty-eight in the "less susceptible to rotate" group (low rotation hereafter). Out of the two groups, sixty-nine participants are under the condition of high likelihood of being discovered if they decide on misrepresentation in the financial

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<sup>3</sup>Our analysis is conducted on the 140 students who passed the manipulation checks (discussed in section 4.1)

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statements and seventy-one are under the condition of a low likelihood. As a reward for participating in the experiment, subjects received a fixed payment of 0.1 points over their final grade plus a variable payment of up to an additional 0.9 points contingent on their performance in the negotiation task (e.g., James and Cohen, 2004) (see table 3). The experiment lasts for about an hour and a half in average.

- - - Insert table 2 here - - -

Table 2 displays information on participant's demographics. Almost half of the participants were male (49%), 96 out of the 140 participants are between 21-25 years old with an average professional experience of around 8 months<sup>4</sup>. Most of the participants were European Caucasians.

The experiment is conducted in a virtual classroom without any physical presence of the experimenter and off teaching hours. Students are given nicknames to ensure the anonymity of their identity through a double-blinded process. The analyzer of the experimental data is prevented to learn the identity of the students avoiding therefore any violation of participants' personal data.

Before beginning the experiment, each participant completes a questionnaire in the web. First, they answer a set of questions that concern their demographic characteristics that let us to control randomization and results. Following, in order to generalize our results in the psychology area, and in particular how the different personalities respond to the probability of rotation, we use the Short Dark Triad (SD3) questionnaire (D. N. Jones and Paulhus 2014),<sup>5</sup> which is shown in appendix A.

After completing this questionnaire, participants are provided with a case experiment together with some instructions (appendix B). This experimental task is partially adapted from

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<sup>4</sup>None of these demographics is statistically significant with regard to the audits reports that participants choose between the two rotation regimes and the two discovering settings. This leads us to the conclusion that we achieved a perfect random assignment between our subjects.

<sup>5</sup>D. N. Jones and Paulhus 2014 confirm that the SD3 represents efficiently, reliably and validly the longer standard measures of the Dark Triad personalities. After comparing the established Dark Triad measures with the SD3, the authors find that the SD3 is highly correlated with the classic DT constructs.

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Libby and Kinney Jr 2000. The design of our experiment follows Fellingham and Newman 1985 and Bowlin, Hobson, and Piercey 2015.

We design an experimental software that proceeds as follows (appendix C). First, participants are given unique nicknames so that to identify themselves in the software. They are then randomly assigned between the four conditions and are first asked to complete a pre-experimental questionnaire related to demographic characteristics and then the SD3 questionnaire. Afterwards, participants are given the case experiment. This software surveys participants on their understanding of the experiment. Remarkably, participants have to confirm their comprehension of the earnings management, their alternatives with regard to audit opinion, probability of renewal (high and low), and probability of the misstatement being discovered (high and low), reputational costs, and investigation costs. If participants answer correctly all questions, they can perform the experimental task that consists on providing their audit report in the presence of earnings management. In order to ensure that all participants comprehend correctly this the task, case features are repeated (and re-explained) each time that the participant commits a mistake until her answers are correct. Thirty-one participants failed to answer correctly all manipulation checks and we thus remove them from our experiment.

The participants are free to abandon the experiment at any time. After performing the experiment, they answer four questions that refer to the extent to which they judge that their audit report was influenced by their personality types so that to answer the questions.

All participants are provided with a case experiment regarding a fictitious technological company called "Double SS". "Double SS" is a multinational technology company that sells consumer electronics, computer software and online services. The information regarding pre-audit balances provided in the case is derived from a company listed in the stock market operating in the same industry as "Double SS". Participants are told that they were contracted four years ago to deliver audit services and that this year, due to legal requirements, the contract they have with the company expires. The company must decide on whether the contract is renewed for another four years or not.

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In the experiment, participants are faced with an unrecorded collection of bad debts that generates an overstatement in the earnings per share. The audit procedures implemented are left on their own judgment and are the ones who decide whether misstatements are material, or whether they are due to fraud or error. Participants are also provided with a payoff matrix.

Following Fellingham and Newman 1985 and Bowlin, Hobson, and Piercey 2015, we defined four levels of audit/investigation costs: “low investigation procedures” (A1), “low-to-medium investigation procedures” (A2), “medium-to-high investigation procedures” (A3), and “high investigation procedures” (A4). The investigation procedures reflected the analytical tools and the hours of personnel that an auditor committed to in order to conclude on her audit opinion (audit quality in its technical side). Since this audit work is costly, the auditor prefers economically the cheapest procedures, etc.:  $A1 > A2 > A3 > A4$ . We assumed that “high investigation procedures” perfectly revealed whether there is a material error resulting on an honest report and “low investigation procedures” do not reveal any material error. Furthermore, participants who provide a dishonest audit opinion by not revealing any material error and are discovered suffer reputational costs (following Fellingham and Newman, 1985),  $R$ , which depend on audit opinion given that the public has knowledge of this overstatement. In such a case, if participants provide an unqualified opinion, they assume 100% of reputational costs. In the case of qualified opinion, they assume 80% of reputational costs. The disclaimer of opinion implies a cost of 20% of the reputational costs. With adverse opinion, participants suffer no cost. Participant decide on the audit opinion: Unqualified (UQ), Qualified (Q), Disclaimer (D) or Adverse (A). The payoff values they receive are such as to incentivize auditors to report a favorable opinion to the company, i.e., dishonest.

This design allows the experiment’s findings to be expanded in settings where reputation is of crucial importance. Something that is particularly true in audit environments. A major-client switch to a better-quality audit firm induces other clients from the same industry to switch form that same office (J. R. Francis, Mehta, and W. Zhao 2017). Further, our setting assembles four key characteristics derived from the natural audit environment. First, the higher the effort (investigation procedures) exerted by the auditors the more likely it is for misstatements to be

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detected. Second, effort is costly and thus higher investigation procedures reflect higher costs. Third, the auditor is always better off the lower the probability a misstatement to be detected. Fourth, the reputational costs incurred by the auditor if a misstatement is detected are higher if the auditor chooses unqualified opinion and no reputational costs are assumed if the auditor chooses adverse opinion. More specifically, the experimental setting generates a strategic tension for the auditor. Even though the ethical equilibrium exists in choosing an adverse opinion, the highest payoff for the auditor is achieved when he chooses the unqualified opinion (economic egoistic decision).

Importantly, auditors' salary remains the same regardless the treatment group (low rotation or high rotation).

- - - Insert table 3 here - - -

Table 3 illustrates the payoffs that were given to the participants before deciding on their audit opinion. Each participant's payoffs relies on exogenously determined probabilities that represent the likelihood the auditor's contract is renewed or not and the likelihood that the public is informed of the misstatement detected in the financial statements. Each auditor then receives the following payoff: Auditors salary – Investigation costs –  $p$  \* Reputational costs, if any. For instance, under condition A participants have a 14% probability ( $70\% \times 20\%$ ) to win 0.90 points extra on their final grade in case the contract is renewed, and the misstatement is discovered by the public, given that the auditor provides an unqualified opinion. However, there is a 56% ( $70\% \times 80\%$ ) probability the participants to earn 0.90 points extra on their final grade if the contract is renewed and the misstatement remains undiscovered.

Ultimately, participants are told that they should provide an audit opinion to the company.

## 4.4 Results

### 4.4.1 Manipulation Checks

Primarily, the between-group design of the experiment let us to randomly distribute participants in the role of auditors through two experimental groups where the probability of the

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contract's renewal is high (70%) or low (30%), under the misstatement to be discovered by the public is high (80%) or low (20%). All participants report their audit opinion based on the case study provided to them. This is done to examine how the probability of being rotated affects the audit report of the auditor, when they confront distinct economic penalties, and consequently to test their honesty level.

To ensure that these experimental settings are correctly embedded and captured by the participants, we ask them after each question to confirm the correct answer among other incorrect answers. Specifically, we ask participants, to indicate the correct number of years the contract is renewed, the probability of renewal, and the probability of discovery. Finally we ask them whether they have understood correctly the definitions of the four different opinions and their task (i.e. provide an audit opinion for the fictitious technological company).

Most of the participants (80%) correctly recalled whether they were in the high rotation or low rotation group, and high or low discovery conditions. Up to Ninety-six percent of the participants understood correctly the questions relating to the audit opinions. In total, 82% participants managed to answer all manipulation checks correctly.

Consequently, we removed from our analysis those participants (thirty-one participants) who failed these manipulation checks.

#### **4.4.2 Effect of rotation on audit quality**

We use as a dependent variable the assessment frame of the auditor, namely "Honesty". It is an ordinal variable that takes the values of 1 if the participants chooses unqualified opinion, 2 if he chooses qualified opinion, 3 for disclaimer of opinion, and 4 for adverse opinion, with 1 being the lowest level of honesty (i.e. complete dishonesty) and 4 the highest level of honesty. The independent variable "High rotation" is a dichotomous variable that takes the value of 1 if the participants are in the low-probability of renewal regime and 0 otherwise. Similarly, the experimental condition is captured by the variable "High Discovery" that takes the value of 1 if the participants are in the high-probability of detection regime, and 0 otherwise.

As above mentioned, the construction of the personality characteristics (Machiavellianism, Nar-

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cissism and Psychopathy) is derived from D. N. Jones and Paulhus 2014 SD3 (appendix A).

We define the independent variables “Machiavellianism”, as individuals who deceive and manipulate, “Psychopathy” as antisocial and spontaneous behaviour and “Narcissism” as a trait who is associated with feelings of pride. The measure of Dark Triad (DT) is a combination of the three pre-mentioned traits which relates to a socially adversive attitude.

In order to facilitate interpretation of DT; we sort out participants between HDT and LDT. We construct a dichotomous independent variable that takes the value of 1, if participants are HDT (exhibit higher levels of personality characteristics than the average of participants) and 0, otherwise. Following Majors (2016) we categorize HDT participants those that have at least one of the three personality characteristics higher than the median of the personality overall and LDT auditors those that have all the personality characteristics at or below the median of the personality<sup>6</sup>.

Gender takes the value of 1 if it is a male participant and 0, otherwise. Age takes the value of 1 if participant falls between 18-20 years old, 2 if participant is between 21-25 years and 3 if he/she is older than 25 years old. Experience is the professional experience of the participant counted in number of months.

- - - Insert Table 4 here - - -

Table 4 reports summary statistics of the whole experimental sample and lists means, standard deviation and medians of the independent variables used in the study as well as summary statistics of our dependent variable (Honesty). In general, we see that most of the participants present a HDT personality and provide an unfair audit report: disclaimer of opinion. Most of the participants exhibit higher than the median levels of each personality trait. For the analysis, we are left with an experimental sample of 140 undergraduate business students.

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<sup>6</sup>We have tried the same analysis using as Dark Triad variable the mean of the continuous measures of psychopathy, Machiavellianism and narcissism. Results remain unchanged

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- - - Insert Table 5 here - - -

Table 5 shows the summary statistics between the two experimental groups: high- and low-likelihood of rotation regime. As it is observed, Honesty (derived from the audit opinion) is not significantly different between high- low- likelihood of rotation contradicting our first hypothesis in that auditors would be more inclined to act more dishonestly under a low-likelihood of rotation regime. The likelihood of being rotated cannot explain therefore the level of honesty of the auditors finding no support for our first hypothesis- This result comes in line with Shockley 1981, Garven, Beck, and Parsons 2018 <sup>7</sup> and Chan, Jiang, and P. L. L. Mo 2017 in that audit rotation has no implications on audit quality. Further, participants in the low-Rotation group seem to be more risk-lovers compared to the high-Rotation

- - - Insert Table 6 here - - -

Looking at table 6, results show that the level of honesty is affected by the probability of being discovered but only in the experimental group of high-rotation. This comes in line with our conclusion from table 5 whereby auditors' reputation concerns seem to diminish in the low-rotation regime. Under high -rotation auditors are more burdened by their reputation status as it is the time to search for a new client-firm and perhaps this is the reason for being more honest under the high-rotation and high-likelihood of being discovered compared to high-rotation and low-likelihood of being discovered.

- - - Insert Table 7 here - - -

In our second scale of hypotheses, we hypothesize that auditors that exhibit higher measures of the Dark Triad personality will be more disciplined by the positive effects. Table 7 provides summary statistics of the effects on Honesty of HDT and LDT personalities in both rotation regimes. What we do see is that under high-likelihood of rotation HDT auditors tend to report statistically significant more honestly compared to LDT. No further significant difference is observed between high and low DT auditors under Low-rotation Regime indicating that under a low-rotation regime subjects respond similarly.

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<sup>7</sup>Garven, Beck, and Parsons 2018 find that audit tenure cannot explain financial reporting quality, measured by abnormally high program ratios and fundraising expenses in non-profit organizations.

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- - - Insert Table 8 here - - -

Complying with the previous literature, we find in table 8 significant positive correlations between Machiavellianism and Narcissism (corr=0.23, significant at 1%), Psychopathy and Machiavellianism (corr=0.32, significant at 1%). No significant correlation is found between and Psychopathy and Narcissism (corr=0.14). Opinion however is not correlated with the Dark Triad attributes providing a hint in that decisions on honesty are not directed by the high-rotation or low-rotation regimes. Figure 1 shows the distributions of the auditors' audit opinion on each of continuous measures of Machiavelliansim, Psychopathy, Narcissism. We observe that most of the participants exhibit a medium level of each personality characteristic.

- - - Insert Table 9 here - - -

For the primary analysis we administer ANOVA. Table 9 reports the results. In Panel A, the interaction terms of Dark Triad and Psychopathy with rotation have a significant main effect on audit opinion. High-Discovered and High-Rotation is also statistically significant indicating that subjects tend to report more honestly when the perceived probability of being discovered by the public is high. The Dark Triad variable is significant only when it is taken into consideration with the DT personality. Untabulated ANOVA on honesty and audit rotation alone shows that rotation cannot explain the level of honesty of each individual.

Figure 2 shows that under low-rotation the level of honesty of both high and low DT auditors converges. However, high DT auditors exhibit more ethical behavior in a regime of rotation compared to low-rotation. In the contrary low DT auditors report more dishonestly under the low-rotation regime.

Table 9, Panel B offers an understanding of this interaction displaying a significant effect of the Dark Triad personality under Rotation Regime: high DT auditors report more honestly compared to low DT auditors when they face a high-likelihood of rotation. The effect of DT personality on the Low-likelihood rotation is insignificant though which leads us to the conclusion that high-Rotation incentivizes high DT auditors to act ethically. This is because, under low-Rotation both high and low DT auditors act similarly. High DT auditors though are inclined to lie when the benefits from lying are associated with higher career outcomes. Individuals that

exhibit higher levels of DT traits tend to be careerists and seek power, social and professional status. It could be the case that under a high-likelihood of rotation any decision on audit opinion linked to a “rise to the top” is eliminated as auditors now face a high likelihood of being rotated to another client-firm. This eventually diminishes the incentives of HDT auditors to lie. Reputation for such individuals is of crucial importance. Leaving their audit-client firm is a ‘wake up call’ for finding a new job, a new professional power-status which makes good reputation essential. Lying causes reputation to diminish and thus their potential career outcomes diminishes as well. The rotation regime has therefore a higher discipline effect over high DT auditors. The interpretation of it illustrates an interesting conclusion. High DT auditors lie when the incentives are linked to better hierarchical positions as it was expected. Low DT auditors do not share the same ambition though as this type of individuals do not have in common the characteristic entailed in the peculiarity of DT auditors.

These findings are particularly relevant for determining the policies that should be implemented for encouraging ethical audit reporting in the workplace: Audit Rotation is essential for high DT auditors and audit tenure could be the best potential policy for low DT auditors.

- - - Insert Table 10 here - - -

We also administer ordered logit regressions in the dummy DT variable and on the continuous measures of each personality characteristic. The dependent variable is the ordinal variable “Honesty” and the main independent variables used in the regressions are the continuous measures of each personality individually (Psychopathy, Machiavellianism, Narcissism) and the Dark Triad dummy variable.

The ordered logit regressions are the following<sup>8</sup>:

$$\begin{aligned}
 Ln(\text{Honesty}) = & \alpha + \beta_1 \text{Rotation} + \beta_2 \text{Discovered} + \beta_3 \text{Personality} + \beta_4 \text{Personality}^9 \text{XHigh} - \text{Rotation} \\
 & + \beta_5 \text{PersonalityXHigh} - \text{Discovered} + \text{Controls}
 \end{aligned}
 \tag{4.1}$$

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<sup>8</sup>Under all regressions, we have used as control variables the gender, age and professional experience. Gender is a dummy that takes the value of 1 if it is male and 0 otherwise. Age is an ordinal variable that takes the value of 1 if participant is between 18-20 years old, 2 if he/she is between 21-25 years old and 3 if participant is older than 25 years old. Professional experience is the number of months participants have worked.

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Table 10, Panel A, column (1) presents the coefficients derived from the ordered logit regression. Contrary to our expectations (hypothesis 2), we see that the probability of audit rotation is not the one that determines honesty confirming previous findings (V. E. Johnson, Khurana, and Reynolds 2002; J. N. Myers, L. A. Myers, and Omer 2003). What drives the results though is the personality attributes. We show that high Dark Triad participants that belong in the rotation regime are more likely to behave completely honesty and choose adverse opinion and less likely to proceed into dishonest actions and report unqualified or qualified opinion. This results shows that the high-rotation regime has a discipline effect over HDT auditors but not over LDT.

Same results are showed in panel B whereby the sample is divided between the two rotation conditions. As we see under the high-Rotation regime higher DT auditors seem to be inclined to act more honestly than before. No significant effect is recorded in the low-likelihood rotation.

- - - Insert Table 11 here - - -

Table 11 highlights the extent to which each personality characteristic determines decisions regarding audit dishonesty. The variables Narcissism and Machiavelliansm, together with their interaction terms do not present any statistically significant results. What we see though is that audit honesty is mainly driven by the Psychopathy side of individual auditors. When we add the psychopathy traits in our model, we see that the high-likelihood of rotation explains honesty in a negative way: participants who face a high-rotation are more likely to act dishonestly. This comes in accordance with the psychology literature which suggests a negative statistical correlation between the Dark Triad traits and the level of honesty.

Participants entailing higher levels of psychopathy are less honest than otherwise. The high-likelihood of rotation regime offers them a discipline effect which in turn stimulates those participants to act more honestly: The interaction coefficient of Psychopathy and high-rotation is positive and statistically significant.

- - - Insert Table 12 here - - -

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Table 12 shows the results from the Dark Triad trait and its continuous measures of each of the three personalities entailed in it using an ordinary least squares method. Results remain unchanged: rotation by itself cannot explain the level of honesty of the auditors. However, the very same personality of each individual auditor is the one that determines honesty decisions when they face a misrepresentation on the financial statements.

## 4.5 Conclusion

Audit independence is a topic of an enduring interest that has received attention not only by academics but also by accounting regulators and standard setters. It is in the core of the audit practice ensuring the integrity of the financial information, in that auditors will offer reports free of any material error or misstatement. The recent turmoil though on accounting scandals casts doubts on the auditor independence forcing regulatory bodies to provide solutions to foster honesty in audit reports (SEC, 2017; EU, 2016). What they propose is to limit the audit-client relationship through audit rotation.

Academic Literature on the other hand, has paid considerable attention on the role of audit rotation on audit quality reporting. Evidence though is not conclusive. We conduct a laboratory experiment in an attempt to capture whether different likelihoods of audit rotation could promote auditor independence by discouraging audit dishonesty. Even though audit quality is the outcome of both competence and independence, the specific objective of this experiment is to explain auditor quality as a function of independence which in turn is determined by personal attributes entailed in each party. According to the psychology literature, a person's response to a particular situation is often a function of his personality characteristics (Fleeson 2001; Shoda, Mischel, and J. C. Wright 1994; Bowers 1973). For that; we believe that a possible explanation for the non-conclusive results surrounding audit rotation and audit quality is that previous studies failed to capture the human nature in their analysis.

Our experiment tests therefore how the Dark Triad traits could indirectly affect auditors' honesty when providing an audit opinion under a probable renewal of their contract. Results indicate that audit rotation per se does not discipline auditors' decisions. Rather, the personality

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aspect of each auditor represents a breakthrough in the way in which we consider how accounting implications can affect audit quality. Future academic research on audit or partner rotation and its accounting implications should consider the personality trait of each individual before taking any conclusions on that. We find that under low likelihood of rotation, both LDT and HDT auditors behave similarly. However, under a high-likelihood of confronting a rotation regime, HDT auditors, and specifically psychopaths, face a discipline effect that allows them to act more honestly than otherwise. This is because, under these prospects, audit-client firms cannot reward auditors with career advancements and thus HDT participants have no more incentives to report dishonestly. Further, high DT auditors are alerted by reputation considerations in that now, after leaving the previous client-firm, they would have to find a new one and thus reputation is crucial.

In the contrary, low Dark Triad auditors seem to report more ethically under low-likelihood of rotation. This experiment enhances our understanding on audit reporting suggesting that low DT auditors see ethical behavior as a function of higher audit tenure. Hence, such group of auditors is motivated to act more honestly when anticipate that the relationship they have with the client-audit firm is likely to be longer.

The findings of this scrutiny are relevant to both practitioners and policy-makers. First audit firms could benefit from training their staff in order to identify how each personality characteristic may react in situations of audit rotation. Also regulatory bodies receive information in that actions for limiting audit-client relationship are only effective for a particular psychological profile. LDT auditors seem to offer more honest reporting under longer tenure. Findings also make a noteworthy contribution to the issue of Dark Triad in corporations pointing out to the negative and positive aspects of both LDT and HDT individuals.

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## Appendix A: Short Dark Triad (SD3) questionnaire

### Machiavellianism subscale

1. It's not wise to tell your secrets.
2. I like to use clever manipulation to get my way.
3. Whatever it takes, you must get the important people on your side.
4. Avoid direct conflict with others because they may be useful in the future.
5. It's wise to keep track of information that you can use against people later.
6. You should wait for the right time to get back at people.
7. There are things you should hide from other people because they don't need to know.
8. Make sure your plans benefit you, not others.
9. Most people can be manipulated.

### Narcissism Subscale

1. People see me as a natural leader.
2. I hate being the center of attention. (R)
3. Many group activities tend to be dull without me.
4. I know that I am special because everyone keeps telling me so.
5. I like to get acquainted with important people.
6. I feel embarrassed if someone compliments me. (R)
7. I have been compared to famous people.
8. I am an average person. (R)
9. I insist on getting the respect I deserve.

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## Psychopathy Subscale

1. I like to get revenge on authorities.
2. I avoid dangerous situations. (R)
3. Payback needs to be quick and nasty.
4. People often say I'm out of control.
5. It's true that I can be mean to others.
6. People who mess with me always regret it.
7. I have never gotten into trouble with the law. (R)
8. I enjoy having sex with people I hardly know
9. I'll say anything to get what I want.

Source: D. N. Jones and Paulhus 2014. The SD3 questionnaire is used in order to assess the level of the Dark Triad personality of each participant. Subjects are required to provide the extent of their agreement or disagreement on each question and then they are scored on a scale of five ranging from 1=strongly disagree to 5=strongly agree. The scoring is reversed on all the reversal items indicated with (R).

### **Appendix B: Case experiment information:**

You are the partner of an audit company committed to continuously identify and implement innovative approaches and tools to help deliver and enhance a high quality audit. Your responsibility involves offering an opinion on the consolidated financial statements of the companies based on your audit.

You were contracted four years ago to deliver audit services for "Double SS" which is a multinational, listed, technology company that sells consumer electronics, computer software, and online services. You are aware that this year the contract you have with "Double SS" expires and the company must decide whether your contract is renewed for another four years or not (period based on legal requirements). If your contract is not extended for the next four years,

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you have to assume a loss with this client of \$56,000. At the end of this fourth-year, you are asked to check the accuracy of the company's business records and provide your audit opinion. "Double SS" also informs you by written communication that there is a probability of 70% that your contract will be renewed for the next four years.

During this fourth-year audit, your evaluation of the debt portfolio addresses a bias in its consolidated financial statements caused by the presence of an unrecorded collection of bad debts. The value of these bad debts is \$300,000 and they result to an overstatement of earnings per share by \$0.01.

You can decide on the quality of the financial information provided by "Double SS". The audit procedures implemented are left on your own judgment and you are the one who decides whether misstatements are material, or whether they are due to fraud or error.

To provide an unqualified opinion you do not need to involve further analytical tools or hours of personnel. Here your investigation costs sum up \$ 4,000. When your opinion is qualified your investigation costs raise to \$8,000. If your opinion is disclaiming, your investigation costs are \$32,000. Finally, your investigation costs are of \$40,000 if you provide an adverse opinion by your extensively use of analytical tools and personnel. The public knowledge of this overstatement has a reputational cost of \$60,000. If you provide an unqualified opinion you assume 100% of reputational costs. In the case of qualified opinion you assume 80% of reputational costs. The disclaimer of opinion implies that you assume 20% of reputational costs. With adverse opinion, you carry out 0% of reputational costs. There is a 20% probability of the misstatement to be discovered.

**YOU HAVE TO CHOOSE AMONG THE NEXT OPINIONS:**

**UNQUALIFIED:** "having obtained sufficient appropriate audit evidence, financial statements are free of misrepresentations".

**QUALIFIED:** "having obtained sufficient appropriate audit evidence, misstatements, individually are material, but not pervasive, to the financial statements".

**DISCLAIMER:** "notwithstanding having obtained sufficient appropriate audit evidence regarding each of the individual uncertainties, it is not possible to form an opinion on the financial

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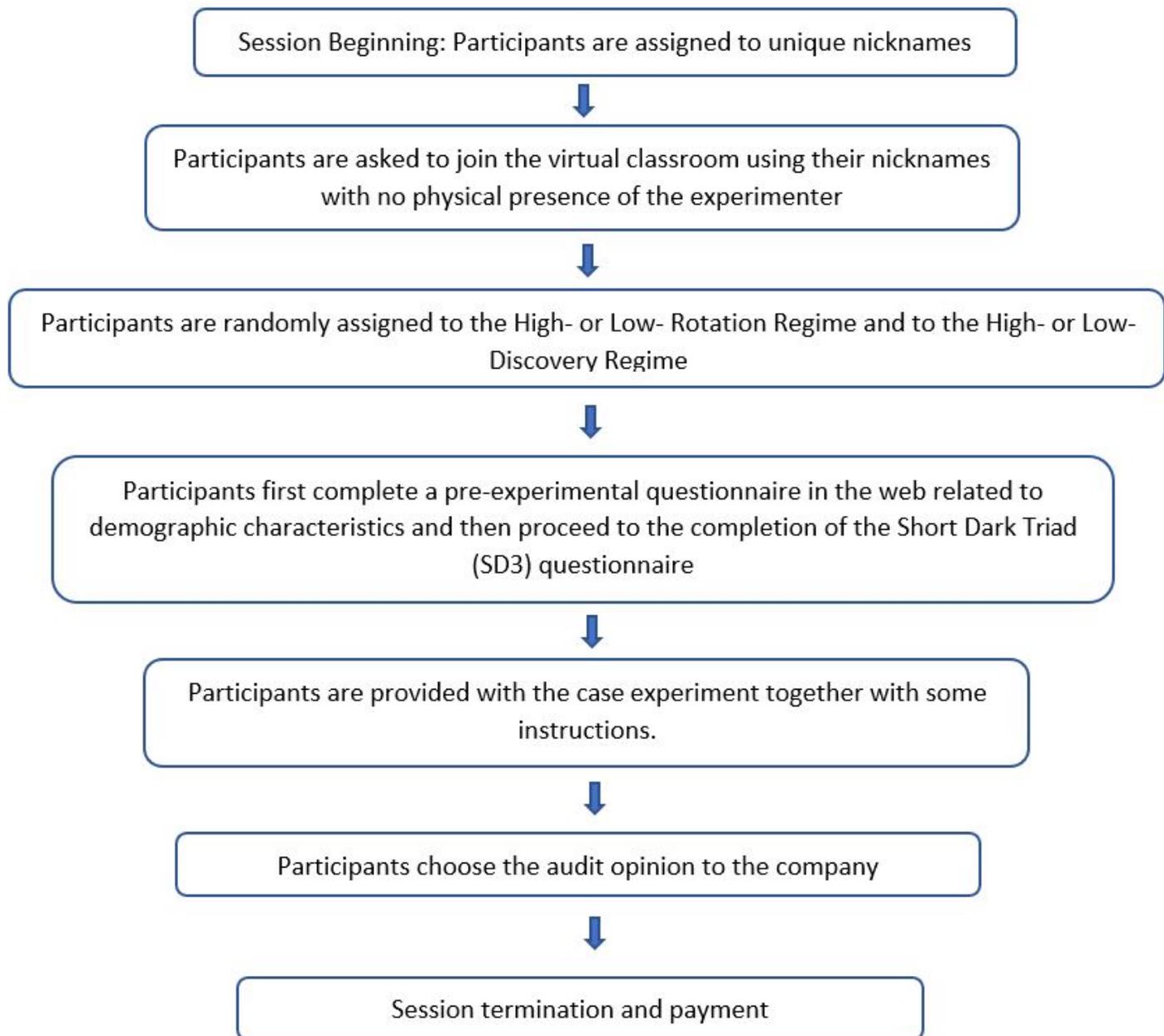
statements due to the potential interaction of the uncertainties and their possible cumulative effect on the financial statements”.

**ADVERSE:** “having obtained sufficient appropriate audit evidence, misstatements, individually or in the aggregate, are both material and pervasive to the financial statements”.

Appendix B provides information on the "case experiment". Participants are provided the same case experiment in all the experiments. The experiment is conducted four times so that to account for the different probabilities of the renewal and of the detection of the misstatement. The probabilities used are shown in table 1. Six participants failed to answer correctly the manipulation checks of the experiment and are thus removed from the final sample.

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## Appendix C: Detailed Procedures



Appendix C details the procedures followed for the experiment.

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Table 4.1: Experimental conditions based on manipulations

		Probability of Renovation	
		70%	30%
Probability of Discovery	20%	A	C
	80%	B	D

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The table indicates the probability that the contract of each participant is renovated with the client company and the probability the public discovers the misstatement in the financial statements, if any. Probabilities differ on each of the four experiments we have conducted.

Table 4.2: Demographic Characteristics

Participants' Demographics		N	Percentage
Gender	Male	69	49%
	Female	71	51%
	Prefer not to answer	0	0%
Age	18-20 years	41	29%
	21-25 years	96	69%
	>25 years	3	2%
Ethnicity	White	51	36%
	Hispanic or Latino	15	11%
	Native Spanish	53	38%
	Asian	17	12%
	Other	4	3%
	Prefer not to answer	0	0%
Occupation	Student	104	74%
	Student and work for-profit organization	33	24%
	Student and work for non-profit organization	3	2%
	Other	0	0%
	Prefer not to answer	0	0%
Study Year	First	61	44%
	Second	9	6%
	Third	41	29%
	Fourth and others	29	21%
Continent	Europe	101	72%
	Asia	15	11%
	North America	12	9%
	South America	9	6%
	Africa	2	1%
	Australia	1	1%

The table indicates demographic characteristics of all the 140 participants. Participants belong, in their majority, in the male group and are in the "21-25 years old" age group.

Table 4.3: Auditors' Payoffs

Audit Opinion		High-Discovered	Low-discovered
Unqualified	Low-Rotation	56	116
	High-Rotation	0	60
Qualified	Low-Rotation	64	112
	High-Rotation	8	56
Disclaimer	Low-Rotation	76	88
	High-Rotation	20	32
Adverse	Low-Rotation	80	80
	High-Rotation	24	24

The table indicates the payoffs of the auditors. Payoffs depend on the auditors' salary, the investigation costs and reputational costs (if any). The final payoffs depend on exogenously determined probabilities (probability of renewal of the contract and probability the misstatement is discovered by the public). Probabilities on each of the four experiments are in accordance to table 1.

Table 4.4: Summary Statistics Full Sample

	n	Mean (st.dev.)	Median	Min	Max
Honesty	140	2.89 (0.97)	3	1	4
High-Rotation	140	0.51 (0.5)	1	0	1
High-Discovered	140	0.49 (0.50)	0	0	1
Dark Triad	140	0.64 (0.48)	1	0	1
Psychopathy	140	2.36 (0.49)	2.33	1.33	3.89
Machiavellianism	140	3.13 (0.57)	3.11	1.56	4.78
Narcissism	140	3.09 (0.49)	3	1.89	4.44
Gender	140	0.49 (0.50)	0	0	1
Age	140	1.73 (0.49)	2	1	3
Experience	140	8.20 (12.69)	4.5	0	66

The table shows the summary statistics of the full sample. The variable Honesty is an ordinal variable that indicates the four types of audit opinions participants have provided. The Dark Triad variable takes the value of 1 if the participant belongs to the higher Dark Triad group and zero otherwise.

Table 4.5: Summary Statistics: High- Vs Low-Rotation Regime

	High-Rotation		Low-Rotation		Diff=
	(n=72)		(n=68)		
	mean (st. dev.)	Median	mean (st. dev.)	Median	
Honesty	2.83 (0.96)	3	2.96 (0.98)	3	Diff= -0.13
Dark Triad	0.61 (0.49)	1	0.68 (0.47)	1	Diff=-0.07
Psychopathy	2.33 (0.47)	2.33	2.38 (0.51)	2.33	Diff=-0.04
Machiavellianism	3.09 (0.58)	3	3.17 (0.57)	3.22	Diff=-0.08
Narcissism	3.00 (0.44)	2.94	3.18 (0.53)	3	Diff=-0.18**
Gender	0.43 (0.50)	0	0.56 (0.50)	1	Diff= -0.13
Age	1.68 (0.53)	2	1.78 (0.45)	2	Diff= -0.10
Experience	7.71 (13.17)	2	8.74 (12.24)	5.5	Diff= -1.03

The table shows the summary statistics of the high-rotation and low-rotation regime. The variable Honesty is an ordinal variable that indicates the four types of audit opinions participants have provided. The Dark Triad variable takes the value of 1 if the participant belongs to the higher Dark Triad group and zero otherwise. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level



Table 4.7: Summary Statistics - Dark Triad Personality

	High-Rotation (n=72)		Low-Rotation (n=68)			
	mean (st. dev.)	Median	mean (st. dev.)	Median		
High Dark Triad (n=44)	3 (0.89)	3	High Dark Triad (n=46)	2.91 (0.96)	3	Diff= 0.0
Low Dark Triad (n=28)	2.57 (1)	2.5	Low Dark Triad (n=22)	3.05 (1.05)	3.5	Diff= -0.0
	Diff=0.43*			Diff =-0.13		

This table presents the summary statistics of the level of Honesty depending on the Dark Triad Personality. Honesty is an ordinal variable that takes values from 1-4. The table shows the summary statistics of the high Dark Triad and Low Dark Triad group in the high- and low-Rotation regimes. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 4.8: Summary Statistics-The Dark Triad components on the level of honesty

	High-Rotation		Low-Rotation			
	mean (st. dev.)	Median	mean (st. dev.)	Median		
High Psychopathy (n=21)	3.05 0.92	3	High Psychopathy (n=20)	2.8 1.01	3	Diff=0.25
Low Psychopathy (n=51)	2.75 0.98	3	Low Psychopathy (n=48)	3.02 0.98	3	Diff= -0.28
	Diff=0.30			Diff=-0.22		
High Narcissism (n=11)	2.73 0.9	2	High Narcissism (n=28)	3 0.94	3	Diff=-0.27
Low Narcissism (n=61)	2.85 0.98	3	Low Narcissism (n=40)	2.93 1.02	3	Diff= -0.07
	Diff=-0.13			Diff=0.08		
High Machiavellianism (n=26)	3 0.98	3	High Machiavellianism (n=30)	2.93 0.94	3	Diff=0.07
Low Machiavellianism (n=46)	2.74 0.95	3	Low Machiavellianism (n=38)	2.97 1.03	3	Diff=-0.23
	Diff=0.26			Diff=-0.04		

This table presents the summary statistics of the level of Honesty depending on the three measures of the Dark Triad personality. Honesty is an ordinal variable that takes values from 1-4. Each measure is separated between high- and low-levels of each personality. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 4.9: Pearson Correlation Matrix

	Gender	Age	Experience	Psychopathy	Machiavellianism	Narcissism	Av Dark Triad	Dark Triad	Rotation	Discovered	Honesty-Ordinal	Honesty-Dummy
Gender	1											
Age	0.054	1										
Experience	0.007	0.32***	1									
Psychopathy	0.352***	0.028	0.031	1								
Machiavellianism	0.185**	0.143*	0.185**	0.347***	1							
Narcissism	0.127	-0.099	0.031	0.158*	0.215***	1						
Av Dark Triad	0.318***	0.041	0.120	0.724***	0.757***	0.625***	1					
Dark Triad	0.133	0.166**	0.084***	0.344***	0.5***	0.333***	0.560***	1				
Rotation	-0.078	neg0.171**	-0.077	-0.031	0.027	-0.085	-0.040	-0.063	1			
Discovered	0.041	-0.006	0.131	0.139**	0.074	0.023	0.114	0.001	neg0.262***	1		
Honesty-Ordinal	0.172**	0.036	-0.005	-0.018	-0.043	-0.041	-0.048	0.065	-0.037	0.172**	1	
Honesty-Dummy	0.136	-0.008	0.046	-0.013	0.031	-0.107	-0.039	0.115	-0.003	0.118	0.853***	1

This table presents the correlation matrix of the variables used in our analysis. We present both ordinal and dummy "Honesty" variable. The ordinal variable takes values from 1-4 depending on the audit opinion they provide. The dummy variable takes the value of 1 if there is honest reporting and, 0 otherwise. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 4.10: Effect of High-Audit Rotation regime and Dark Triad on Auditors' level of Honesty

Dependent Variable = Honesty					
<b>Panel A: Analysis of Variance</b>					
	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F-statistic</u>	<u>p-value</u>
High-Rotation	1	2.95	2.95	3.24	0.07*
High-Discovered	1	4.34	4.34	4.77	0.03**
Dark Triad	1	0.06	0.06	0.07	0.78
Dark Triad * High-Rotation	1	2.83	2.83	3.1	0.08*
Dark Triad * High-Discovered	1	1.07	1.07	1.18	0.28
Error	134	121.99	0.91		
<b>Other Interaction Significant at p &lt;0.10</b>					
Psychopathy * High Rotation	1	2.99	2.99	3.2	0.08*
<b>Panel B: Effect of Dark Triad</b>					
	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F-statistic</u>	<u>p-value</u>
High-Rotation Regime	1	7.59	7.59	9.23	0.003***
Error	68	55.91	0.82		
Low-Rotation Regime	1	0.47	0.47	0.48	0.49
Error	64	63.18	0.99		

This table shows the analysis of variance based on the auditor's level of honesty. Panel A presents simple effects of the Dark Triad personality and the effect of the psychopathy nature of individuals on audit honesty. Panel B shows simple effects of the Dark Triad personality under high-rotation and low-rotation Regime. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 4.11: Effect of the Dark Triad Personality on the two Rotation Regimes

Dependent Variable = Honesty				
<b>Panel A: Dark Triad effect</b>				
	(1)	(2)	(3)	(4)
High-Rotation	-0.23	-0.12	-0.11	-0.88
	(0.30)	(0.32)	(0.32)	(0.55)
High-Discovered			0.66**	1.30**
			(0.32)	(0.55)
Dark Triad				0.04
				(0.62)
DarkTriad*High-Rotation				1.24*
				(0.68)
Dark Triad*High-Discovered				-0.81
				(0.67)
Controls	No	Yes	Yes	Yes
Observations	140	140	140	140
Pseudo R2	0.00	0.02	0.03	0.05
p-value	0.45	0.19	0.04	0.03
Log-Likelihood	-177.72	-174.92	-172.84	-169.72
<b>Panel B: Dark Triad effect on High- and Low-Rotation Regimes</b>				
Dependent Variable = Honesty				
	(1)	(2)		
High-Discovered	2.08***	0.34		
	(0.75)	(0.88)		
Dark Triad	1.89***	-0.54		
	(0.70)	(0.73)		
Dark Triad * High-Discovered	-1.93**	0.23		
	(0.96)	(1.00)		
Controls	Yes	Yes		
Observations	72.00	68.00		
Pseudo- R2	0.09	0.04		
P-value	0.01	0.40		
Log-likelihood	-85.04	-80.69		

This table presents the effects of the Dark Triad personality on audit honesty using an ordered logit regression. Panel A shows the effect of the rotation on the honesty level and how the Dark Triad personality can explain the level of honesty. Panel B shows the effect of the DT personality under high-rotation regime (column (1)) and low-rotation regime (column (2)). Standard errors are in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 4.12: Effect of the Continuous measures of each personality characteristic on Audit Honesty

Dependent Variable = Honesty				
	(1)	(2)	(3)	(4)
High-Rotation	-3.37**	0.13	-0.70	-2.18
	(1.68)	(2.04)	(1.80)	(-0.82)
High-Discovered	-0.24	0.55	-0.70	-1.2
	(1.71)	(2.02)	(1.84)	(-0.45)
Psychopathy	-1.05			-1.05
	(0.72)			(-1.37)
Psychopathy* High-Rotation	1.40**			1.53**
	(0.70)			(2.03)
Psychopathy* High-Discovered	0.36			0.31
	(0.71)			(0.39)
Narcissism		-0.22		-0.08
		(0.54)		(-0.14)
Narcissism* High-Rotation		-0.08		-0.23
		(0.66)		(-0.34)
Narcissism* High-Discovered		0.03		-0.10
		(0.65)		(-0.14)
Machiavellianism			-0.52	-0.19
			(0.55)	(-0.32)
Machiavellianism * High-Rotation			0.20	-0.23
			(0.57)	(-0.42)
Machiavellianism*High-Discovered			0.44	0.42
			(0.58)	(0.67)
Controls	Yes	Yes	Yes	Yes
Observations	140	140	140	140
Pseudo R2	0.04	0.03	0.03	0.05
p-value	0.06	0.18	0.16	0.29
Log-Likelihood	-170.54	-172.32	-172.11	-169.84

This table presents the effects of the continuous measures of each personality on honesty level. Standard errors are in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Table 4.13: Effect of the Dark Triad personality and its Continuous measures on Audit Honesty using OLS

Dependent Variable = Honesty							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
High-Rotation	-0.12 (0.16)	-0.05 (0.16)	-0.43 (0.27)	-1.68** (0.83)	0.34 (1.10)	-0.21 (0.92)	-0.72 (-0.51)
High-Discovered		0.35** (0.16)	0.64** (0.27)	0.00 (0.87)	0.59 (1.08)	-0.39 (0.95)	-0.39 (-0.28)
Dark Triad			0.03 (0.31)				
Dark Triad*High-Rotation			0.60* (0.34)				
Dark Triad *High-Discovered			-0.39 (0.34)				
Psychopathy				-0.48 (0.35)			-0.49 (-1.32)
Psychopathy* High-Rotation				0.69** (0.34)			0.77** (2.06)
Psychopathy* High-Discovered				0.14 (0.36)			0.13 (0.33)
Narcissism					-0.02 (0.29)		0.04 (0.14)
Narcissism* High-Rotation					-0.13 (0.35)		-0.21 (-0.57)
Narcissism* High-Discovered					-0.08 (0.35)		-0.13 (-0.36)
Machiavellianism						-0.27 (0.28)	-0.13 (-0.43)
Machiavellianism * High-Rotation						0.05 (0.29)	-0.16 (-0.51)
Machiavellianism* High-Discovered						0.23 (0.3)	0.25 (0.77)
Controls	No	Yes	Yes	Yes	Yes	Yes	Yes
Observations	140	140	140	140	140	140	140
R2	0.004	0.038	0.110	0.100	0.077	0.080	0.115
p-value	0.46	0.07	0.05	0.07	0.22	0.19	0.32

This table presents the effects of the Dark Triad personality and its the continuous measures using an ordinary least squares. Standard errors are in parentheses. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

Figure 4.1: The Effect of Audit Rotation and the Dark Triad personality on auditors' level of honesty

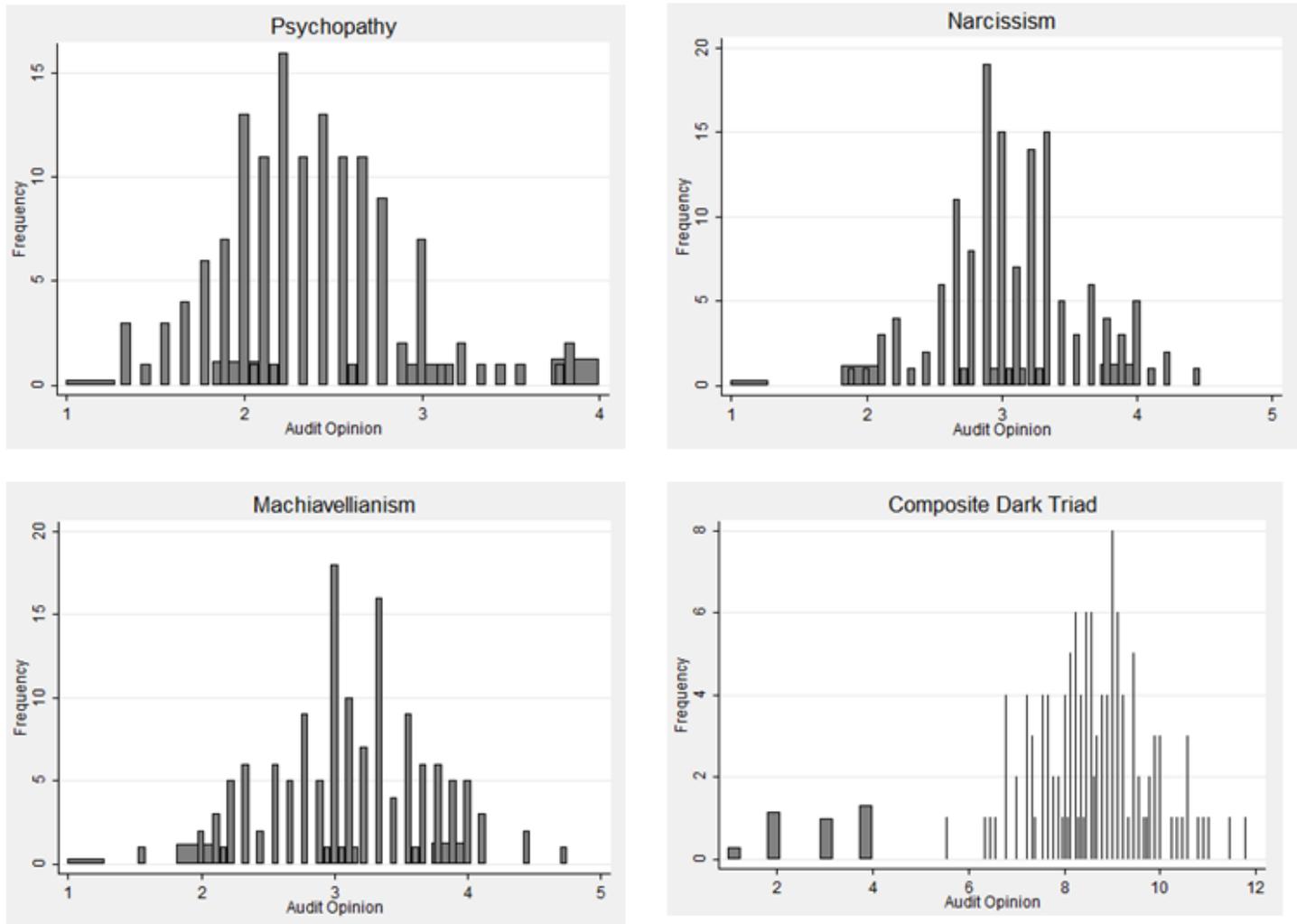


Figure 1 displays the histograms of the auditors' average continuous measures on each personality related to the Dark Triad behavior. The dependent variable is the Honesty, an ordinal variable which takes values from 1-4 if the auditor chooses unqualified, qualified, disclaimer and adverse opinion respectively.

Figure 4.2: Effect of the Continuous measures of each personality characteristic on Audit Honesty

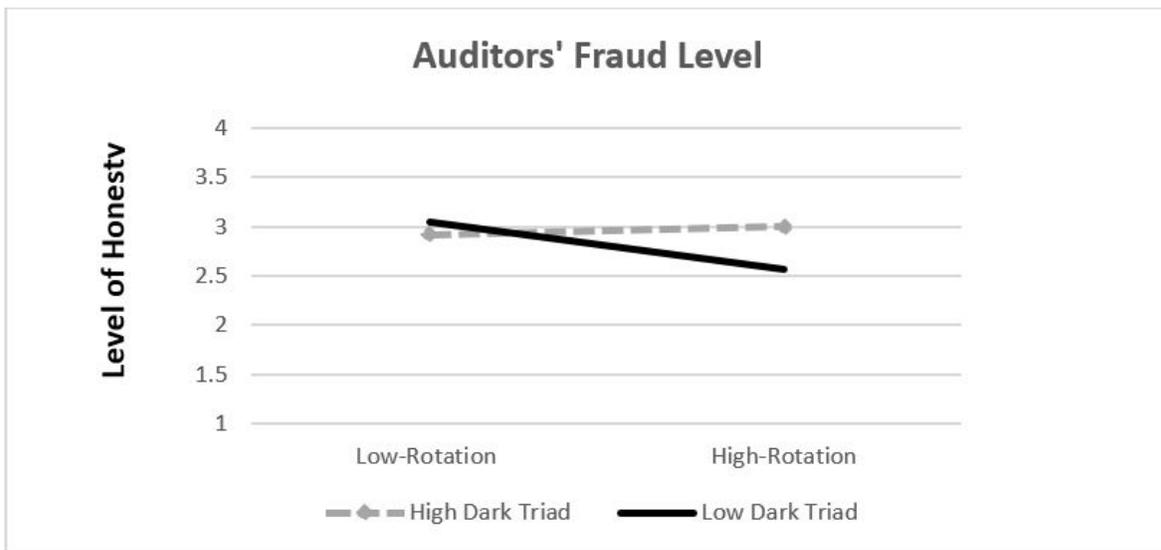


Figure 2 shows the level of honesty of High- and Low-Dark Triad participants under both Rotation and No-Rotation conditions. The dependent variable is the ordinal variable "Honesty" that depends on the audit opinion. The level of the Dark Triad personality is derived from the three Dark Triad-related personalities (psychopathy, machiavellianism, narcissism) using the Short Dark Triad questionnaire.

# Appendices



# Appendix A

## Online Appendix Chapter 1:

### Table of Contents

#### Section IA1: Data Collection and Processing

#### Section IA2: Sample Composition

Table IA1: Distribution of firms per country of incorporation

Table IA2: Distribution of High and Low-Exposure to corruption firms per country of incorporation

Table IA3: Number of subsidiaries per country of incorporation

#### Section IA3: Supplementary Tests for the effect of the UK BA

Table IA4: First Stage Regressors for Abnormal OPEX

Table IA5: Effect of the UK BA on Audit Fees - no matching

Table IA6: Effect of Exposure to Corruption on Audit Fees - no matching

Table IA7: Effect of Exposure to Corruption on Abnormal OPEX - no matching

#### Section IA4: Validity of difference-in-difference-in-difference

Figure IA1: Validity of triple difference on Abnormal OPEX

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## IA1 Data Collection and Processing

All the analysis was conducted using STATA software. We started downloading the data from Osiris database (Bureau Van Dijk group) aiming at constructing a primary sample of all the publicly listed firms operating at the international environment that have at least one subsidiary.<sup>1</sup> Osiris gives information on listed and major unlisted/delisted industrial firms globally. Specifically, we were interested in the accounting information at the consolidated level as well as the number of subsidiaries that each firm owned. Because of the international nature of the dataset, we download all information in United States dollars (USD). It was also crucial for our analysis to know the country of incorporation of each firm and of their subsidiaries.

Table IA1 shows the distribution of firms per country of incorporation that we use in the final analysis for the two year pre- and post-BA period. Furthermore, it was essential to obtain information on the incorporation date of each subsidiary to be able to start constructing our dataset. As a first step, we start by asking Osiris to download all the firms around the globe that had at least one subsidiary together with their accounting information from 2004 until 2014. The data were downloaded during October 2018 from Osiris database. Osiris database downloads the data directly into an excel file. Because of the very limited amount of observations excel accepts, we downloaded 29 separate excel files that included information on all the publicly listed and major listed/unlisted firms around the globe that had at least one subsidiary. We then had to import all this information into different Stata files and finally we had to combine all these different files together into one big Stata file. We deleted accounting information that was consolidated as we were not interested in unconsolidated data. We also deleted firms that were incorporated after 2006, because year 2006 was the first year of the two-year pre-UK BA period. We also deleted subsidiary companies that had less than -or equal to- 50% of direct ownership on the subsidiaries. This is because, the UK Bribery Act, 2010 (UK BA) states that “the offence can be committed in the UK or Overseas and is a strict liability offence even if

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<sup>1</sup>This requirement is necessary because, according to the UK BA, an organization (wherever incorporated) that carries on a business in any part of the United kingdom, is guilty of an offence if a person A, associated with the organization, bribes another person. Association can be established in the case that A is a subsidiary of the organization. Thus in our analysis, to determine which firms are affected by the UK BA and which firms are not affected by the act, we had to collect information based on firms that have at least one subsidiary.

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improper payment has no connection of any kind to the UK”<sup>2</sup> .. and “failure to prevent bribery in the course of business applies to any overseas entity that carries on a business or part of a business in the United Kingdom”. “Part of a business” might also refer to subsidiary. Therefore for ownership to be established it must be the case that the parent company has more than 50% of shares in the subsidiary. We also delete observations when we did not have information on the direct ownership of the subsidiary.

At the same time, for the construction of the treated and control group, it was necessary to have information on the incorporation date of each subsidiary<sup>3</sup>. Unfortunately, Osiris does not provide information on the subsidiaries’ incorporation date. To obtain this information, we had to gather all the subsidiaries’ identification code that was already provided to us when we downloaded the firms in the first step and use them to download information at the subsidiary level rather than at the consolidated level. However, many subsidiaries were not publicly traded companies and thus Osiris is not the appropriate database to look for this information as it does not include private companies.

Bureau Van Dijk provides information on private companies through Orbis database. However, the license of Orbis that we had access to only included large and very large companies. For that reason, the subsidiary incorporation dates downloaded from Orbis included information only on large or very large subsidiaries. In an attempt to collect as much information as possible on the incorporation date of the subsidiaries, we also used Osiris to download the incorporation dates of listed and mayor unlisted/delisted subsidiaries. Further, Bureau Van Dijk offers a third database called Amadeus that contains only European companies. We thus used this database to download the incorporation dates of the European subsidiaries. Since all the information comes from the same group of databases, we matched Osiris, Orbis and Amadeus information on the subsidiaries’ incorporation date based on *bvdacnr* which is a

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<sup>2</sup>It can be found in Transparency International UK in the following link:  
<https://www.transparency.org.uk/our-work/business-integrity/bribery-act/>

<sup>3</sup>The UK Bribery Act, 2010 received its royal assent in 2010 and started its enforcement in 2011. We exclude from our analysis year 2009 as it contains high uncertainty regarding the enforcement of the act and we consider 2010 as the event year. That the three years prior to the event are the 2006-2008 and the two year after the event are the 2010-2012. We then had to determine the firms that had subsidiaries in each of the years of the analysis to include them in our study.

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common identification code for all companies in the Bureau Van Dijk group. After merging the three databases there was overlapping information. We deleted duplicates, as well as missing observations on the subsidiary incorporation date and the subsidiary identification code. After that, we had to merge the dataset that included information on the incorporation date of each subsidiary around the globe with the dataset that had information on each parent company (previously downloaded from Osiris). We matched on subsidiaries' common identification code (subsvdnr). After the merging, we required subsidiaries to be incorporated on or before 2006 so as to be able to construct a correct treated and control group. It was also important to keep in our analysis subsidiaries that survived up until 2013 at least. We wanted to avoid constructing a sample of firms and subsidiaries that were shut down in the post-UK BA as this would bias our results. After that, we constructed the treated and control group. The treated group is an indicator variable for the firms that were affected by the UK BA. This means that the treated variable takes the value of one (zero) for all the firms that were either incorporated in the UK or had a subsidiary in the UK (for the rest of the firms). For example, a Colombian parent firm with one UK subsidiary and one French subsidiary will still get the value of one and be included in the treated sample.

At this point we had all the accounting information necessary as well as our treated and control variables. We further had to construct our Corruption exposure measure. Using the Zeume 2017 measure, we had to collect the Corruption Perception Index of each country (CPI) (from Transparency International) for each year in our analysis (i.e 2004-2014) and then we used this measure to construct the "Exposure" variable. At this point, we were able to construct three of our four dependent variables. Specifically, we have the information necessary to calculate abnormal operating expenses and the absolute value of discretionary accruals using two different approaches. The only dependent variable missing was the natural logarithm of audit fees.

Below, we explain the steps followed to calculate the natural logarithm of audit fees.

In a different dataset, we downloaded the audit fees the companies paid during the period 2004-2014 from Thomson Reuters Worldscope. However, due to the fact that Thomson Reuters Worldscope and Bureau Van Dijk had different identification codes for companies we had to

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merge the two databases based on company name. We required a 97% similarity between the company name in Thomson Reuters Worldscope and Bureau Van Dijk in order to allow a match. After doing this, we hand crossed the merging and we deleted 155 observations that were wrongly matched. As a final step, and since we deal with an international dataset, audit fees from Thomson Reuters Worldscope were presented at the country's currency. We used the exchange rates from the World Bank to adjust all audit fees to USD. Not all exchange rates were available and thus we are left with 1,667 unique firm year observations. However, after deleting further missing information, we are left with 2,551 firm-year observations for our main analysis which included years 2006-2012. In further robustness checks we used years 2004-2014. Ultimately, we had a complete panel of all the firms that had subsidiaries globally in the pre- and post-BA period together with the audit fees they paid. We further calculated the corruption Exposure measure at the consolidated level using the CPI. The variable is continuous and is increasing in the level of corruption exposure of the firm. We then construct a dummy Exposure variable that takes the value of one if the firms' corruption exposure is at or above the median level and zero otherwise. After constructing our main measurements, we were ready to run the regressions necessary for the main analysis.

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## IA2 Sample Composition

In this section we show the sample composition. In Table IA1 we report the number of firms used in our analysis per country of incorporation. Most of the firms used in our analysis come from Japan, the United Kingdom and the USA. The next biggest sample of firms comes from Malaysia. The total sample leaves us with 1,309 firms per year to be used in our analysis.

In Table IA2 we report the composition of firms per corruption exposure level and country of incorporation. The firms are assigned to the high- or low-corruption exposure group based on the sample median. Firms that have a corruption exposure equal or greater (lower) than the sample median are included in the high (low) exposure group. The corruption exposure is calculated using the Corruption Perception Index from Transparency International as described in the main text. Japan has a greater proportion of firms assigned to the high-exposure group whereas the United Kingdom and the USA have a greater proportion of firms in the low corruption group. In general, the proportion of firms that belong to the high and low exposure group is similar as 47% (53%) belong to the high (low) corruption exposure group.

Table IA3 shows the number of subsidiaries incorporated in the different countries. By identifying the subsidiaries incorporated in each country, we can check which countries are mainly driving the results. This is because, the subsidiary country of incorporation is the one that determines the corruption exposure at firm level, which is one of our main explanatory variables. We see that most of the subsidiaries in our sample are incorporated in the United Kingdom, the Netherlands, the USA, Germany and Japan. These countries are generally perceived as having lower corruption levels and this is what explains a relatively low mean (median) corruption exposure of 3.13 (2.9) for our sample period.

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## IA3 Supplementary Tests for the effect of the UK BA

In this section we test the effect of the UK BA on audit fees and financial reporting quality without proceeding to any matching method.

Before moving on to the test, we calculate the first stage regressions of the abnormal operating expenses. Table IA4 shows the results.

Table IA5 presents the impact of the UK BA on audit fees after running equation (1.1). Without accounting for fixed effects, we find that the UK BA caused a decrease in audit fees in column (1). The result is statistically significant at 10%. In columns (2) and (3) we include fixed effects and we see that the result ceases to exist. This shows that the significant effect of the UK BA on audit fees may be attributed to firm and year specific characteristics and not to the UK BA itself.

Next, we run regression (1.3.2) before doing any matching procedure. Table IA6 reports the results of the effect of the UK BA on the audit fees of the firms that have high and low corruption exposure. The firms that have low corruption exposure experience a decrease in their audit fees compared to the low corrupt exposed firms that are not liable under the UK BA. This is consistent with the deterrence effect of the law. However, the firms that have high corruption exposure suffer an increase in their audit fees, consistent with the idea that these firms are perceived as riskier for the auditors. The same results are reported for the non-FCPA and OECD subsample of firms. In summary, results are in accordance to the results found after entropy and propensity score matching with the exception of the low corrupt exposed group of firms. We believe, however, that the correct inferences can be derived after applying an entropy balancing method. The reason for this, is that the firm characteristics of the treated and control group before the UK BA are quite different.

In order to confirm the idea that the increase in audit fees is caused by the auditor's per-

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ception of an increase in business risk and not because of an increase in audit quality, we check the earnings quality of the firms. Table IA7 reports the results before applying any matching method. The dependent variable is abnormal operating expenses. The results are the same as the ones shown in the main analysis, after entropy matching (Table 6).

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## IA4 Validity of difference-in-difference-in-difference

Figure IA1 shows the counterfactual effects on the abnormal operating expenses, at a 95% confidence interval, for the triple interaction (DiDiD). Before running the regression, we apply entropy balancing. Abnormal OPEX are calculated after following Dechow, Kothari, and Watts 1998 further modified by Roychowdhury 2006. We observe that prior to the UK BA, there is not a statistically significant difference in the abnormal OPEX of the high- and low-corruption exposure firms.

TABLE IA1:  
Distribution of firms per country of incorporation

Country	Frequency	Percent
Australia	60	4.58%
Austria	2	0.15%
Belgium	5	0.38%
Bermuda	11	0.84%
Canada	16	1.22%
Cayman Islands	7	0.53%
China	11	0.84%
Cyprus	1	0.08%
Denmark	12	0.92%
Finland	17	1.30%
France	45	3.44%
Germany	48	3.67%
Hong Kong	15	1.15%
India	34	2.60%
Ireland	6	0.46%
Israel	2	0.15%
Italy	19	1.45%
Japan	290	22.15%
Kenya	1	0.08%
Luxembourg	1	0.08%
Malaysia	69	5.27%
Marshall Islands	1	0.08%
Netherlands	14	1.07%
New Zealand	5	0.38%
Nigeria	1	0.08%
Norway	15	1.15%
Peru	1	0.08%
Poland	2	0.15%
Singapore	56	4.28%
South Africa	22	1.68%
Spain	18	1.38%
Sri Lanka	1	0.08%
Sweden	48	3.67%
Switzerland	30	2.29%
Taiwan	2	0.15%
United Kingdom	200	15.28%
United States of America	220	16.81%
Zimbabwe	1	0.08%
Total	1309	100.00%

*Notes:* This table shows the distribution of firms by country of incorporation. The data include only the firms used in our main analysis which is a two year pre-UK BA period (2007-2008) and a two year post-UK BA period (2011-2012). Thus in our main analysis we test 1,309 firms per year.

TABLE IA2:  
Distribution of high- and low-exposure to corruption firms per country of incorporation

Country	High-Level	Low-Level
Australia	14	46
Austria	2	0
Belgium	2	3
Bermuda	3	8
Canada	6	10
Cayman Islands	4	3
China	11	0
Cyprus	0	1
Denmark	4	8
Finland	5	12
France	19	26
Germany	22	26
Hong Kong	3	12
India	26	8
Ireland	5	1
Israel	2	0
Italy	17	2
Japan	178	112
Kenya	1	0
Luxembourg	1	0
Malaysia	66	3
Marshall Islands	0	1
Netherlands	6	8
New Zealand	0	5
Norway	0	15
Peru	0	1
Nigeria	1	0
Poland	2	0
Singapore	14	42
South Africa	21	1
Spain	15	3
Sri Lanka	1	0
Sweden	5	43
Switzerland	16	14
Taiwan	2	0
United Kingdom	30	170
United States of America	106	114
Zimbabwe	1	0
Total	611	698

*Notes:* This table shows the distribution of firms by the country of incorporation after dividing the sample into firms with high- and low-exposure to corruption. “High-Freq” (“Low-Freq”) refers to the unique number of firms per year that have high (low) corruption exposure as determined by the median corruption exposure. High (Low) corruption exposure indicates a firm’s corruption is above (below) the median corruption exposure level. The data include only the firms used in our main analysis which is a two year pre-UK BA period (2007-2008) and a two year post-UK BA period (2011-2012). Thus, in our main analysis we test 1,309 firms per year.

**TABLE IA3:**  
Number of subsidiaries per country of incorporation

Country	Frequency	Percent
Australia	88	1.05%
Austria	42	0.50%
Bahrain	2	0.02%
Belgium	87	1.04%
Bermuda	38	0.45%
Brazil	5	0.06%
Canada	30	0.36%
Cayman Islands	12	0.14%
China	18	0.21%
Cyprus	14	0.17%
Czech Republic	4	0.05%
Denmark	94	1.12%
Egypt	4	0.05%
Finland	33	0.39%
France	318	3.80%
Germany	281	3.35%
Ghana	1	0.01%
Greece	13	0.16%
Guernsey (United Kingdom)	1	0.01%
Hong Kong	30	0.36%
Iceland	2	0.02%
India	31	0.37%
Ireland	124	1.48%
Islamic Republic of Iran	2	0.02%
Isle Of Man (United Kingdom)	4	0.05%
Israel	21	0.25%
Italy	139	1.66%
Japan	257	3.07%
Jersey (United Kingdom)	7	0.08%
Jordan	3	0.04%
Latvia	2	0.02%
Lebanon	1	0.01%
Liberia	1	0.01%
Liechtenstein	2	0.02%
Lithuania	1	0.01%
Luxembourg	137	1.64%
Malaysia	17	0.20%
Malta	15	0.18%
Mauritius	4	0.05%
Mexico	4	0.05%
Netherlands	432	5.16%
New Zealand	2	0.02%
Nigeria	4	0.05%
Norway	50	0.60%
Philippines	2	0.02%
Poland	8	0.10%
Portugal	11	0.13%
Republic of Korea	12	0.14%
Russian Federation	9	0.11%
Singapore	37	0.44%
Slovakia	1	0.01%
South Africa	26	0.31%
Spain	66	0.79%
Sri Lanka	2	0.02%
Sweden	129	1.54%
Switzerland	145	1.73%
Trinidad and Tobago	2	0.02%
Turkey	3	0.04%
United Arab Emirates	1	0.01%
United Kingdom	5,135	61.30%
United States of America	409	4.88%
Uzbekistan	1	0.01%
Virgin Islands (British)	1	0.01%
<b>Total</b>	<b>8,377</b>	<b>100.00%</b>

*Notes:* This table shows the number of subsidiaries incorporated in each country. This is based on the raw data downloaded from Bureau Van Dijk databases before starting the analysis.

TABLE IA4:  
First stage regressors for abnormal OPEX

Dependent Variables: Abnormal OPEX	
Inverse assets	2,928.618*** (24.594)
Sales <sub>t-1</sub>	0.987*** (238.729)
Constant	0.034*** (6.932)
Observations	10,134
Adjusted R-squared	0.856

*Notes:* This table shows the first stage regression of the abnormal operating expenses. We run equation (1.3) following Roychowdhury 2006. The dependent variable is operating expenses scaled by lagged total assets. T-statistics are reported in parentheses. All variables are as defined below equation (1.3) in the text. \*\*\* represent significance levels of 1%, two-tail levels respectively.

TABLE IA5:  
Effect of the UK BA on audit fees

Dependent Variable: Log (Audit Fees)	All		
	(1)	(2)	(3)
Treated	0.813*** (7.057)		
Post	0.522*** (8.117)		
Treated × Post	-0.234* (-1.665)	-0.195 (-1.106)	-0.195 (-1.196)
Leverage	0.108*** (2.802)	0.071* (1.949)	0.067** (2.233)
Inventory Receivables	-1.063*** (-6.021)	-0.465 (-0.714)	-0.417 (-0.605)
Quick	-0.111*** (-3.719)	0.007 (0.249)	0.017 (0.581)
ROI	1.252* (1.814)	-0.780* (-1.883)	-0.676* (-1.810)
Loss	0.377*** (3.835)	0.021 (0.428)	0.019 (0.404)
BIG4	0.031 (0.569)	-0.040 (-0.557)	-0.057 (-0.667)
Asset Growth	-0.132 (-0.977)	0.033 (0.439)	0.043 (0.551)
ROA	0.878 (1.071)	0.281 (0.833)	0.139 (0.442)
Size	0.287*** (24.267)	0.151 (0.953)	0.171 (1.108)
Tenure	0.030*** (4.011)	0.007 (0.886)	0.010 (1.399)
BM	-0.013*** (-22.115)	0.003** (2.638)	0.003** (2.757)
Constant	9.477*** (42.575)	11.505*** (4.360)	11.155*** (4.262)
Year FE	N	Y	N
Firm FE	N	Y	Y
Year-Industry FE	N	N	Y
Observations	2,559	2,429	2,416
Adjusted R-squared	0.355	0.937	0.936

*Notes:* This table shows the difference-in-difference effect of the UK Bribery Act on audit pricing in the post-BA period, 2010-2012, compared to the pre-BA period, 2006-2008. The dependent variable is the natural logarithm of audit fees paid by the parent company. Fixed Effects are as indicated. Clustering of standard errors is at country level. T-statistics are reported in parentheses. All variables are as defined in Appendix 1. \*, \*\*, and \*\*\* represent significance levels of 10%, 5%, and 1%, two-tail levels respectively.

TABLE IA6:  
Effect of exposure to corruption on audit fees

Dependent Variable: Log (Audit Fees)	All			Non-FCPA		OECD	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Treated	1.114*** (6.853)						
Post	0.620*** (6.374)						
Treated × Post	-0.607*** (-2.967)	-0.421* (-1.828)	-0.438* (-1.823)	-0.516** (-2.241)	-0.545** (-2.217)	-0.571** (-2.354)	-0.570** (-2.305)
Treated × Post × Corruption	0.724** (2.565)	0.430* (1.903)	0.455* (1.861)	0.504** (2.357)	0.529** (2.178)	0.511** (2.329)	0.510* (2.072)
Corruption	0.339*** (3.249)	-0.056 (-1.300)	-0.028 (-0.573)	-0.029 (-0.449)	0.004 (-0.061)	-0.073 (-0.731)	-0.02 (-0.237)
Treated × Corruption	-0.576** (-2.520)	-0.479*** (-4.609)	-0.467*** (-3.878)	-0.552*** (-5.409)	-0.525*** (-3.419)	-0.521*** (-3.878)	-0.509*** (-3.035)
Post Period × Corruption	-0.207 (-1.617)	-0.027 (-0.319)	-0.081 (-0.969)	-0.063 (-0.779)	-0.124 (-1.577)	-0.054 (-0.564)	-0.12 (-1.489)
Leverage	0.108*** (2.805)	0.058* (1.727)	0.055* (1.844)	0.087*** (3.629)	0.070** (-2.187)	0.068*** (3.668)	0.048* (-1.766)
Inventory Receivables	-1.149*** (-6.463)	-0.469 (-0.706)	-0.423 (-0.607)	-0.392 (-0.506)	-0.429 (-0.539)	0.463 (1.340)	0.432 (-1.055)
Quick	-0.111*** (-3.722)	0.006 (0.207)	0.016 (0.557)	0.001 (0.020)	0.015 (-0.393)	0.026 (0.493)	0.037 (-0.705)
ROI	1.226* (1.780)	-0.738* (-1.771)	-0.661* (-1.713)	-0.628 (-1.231)	-0.523 (-1.193)	-0.698 (-1.067)	-0.467 (-0.727)
Loss	0.366*** (3.729)	0.019 (0.392)	0.016 (0.353)	0.006 (0.115)	0.008 (-0.17)	-0.001 (-0.026)	0.003 (-0.053)
BIG4	0.040 (0.743)	-0.041 (-0.565)	-0.055 (-0.634)	-0.058 (-0.635)	-0.059 (-0.525)	-0.130 (-1.443)	-0.123 (-1.049)
Asset Growth	-0.126 (-0.930)	0.020 (0.272)	0.031 (0.426)	-0.015 (-0.216)	-0.016 (-0.200)	0.012 (0.196)	-0.022 (-0.304)
ROA	0.840 (1.028)	0.280 (0.795)	0.161 (0.476)	0.374 (0.916)	0.262 (-0.657)	0.288 (0.602)	0.033 (-0.062)
Size	0.281*** (23.094)	0.169 (1.145)	0.180 (1.272)	0.155 (1.072)	0.187 (-1.352)	0.211 (1.334)	0.245* (-1.846)
Tenure	0.030*** (4.064)	0.008 (0.924)	0.010 (1.343)	0.011 (1.188)	0.013 (-1.703)	0.009 (1.044)	0.012 (-1.115)
BM	-0.013*** (-21.568)	0.003** (2.564)	0.003** (2.692)	0.003** (2.297)	0.003** (-2.448)	0.003* (1.745)	0.003* (-1.974)
Year FE	N	Y	N	Y	N	Y	N
Firm FE	N	Y	Y	Y	Y	Y	Y
Year-Industry FE	N	N	Y	N	Y	N	Y
Sum of Coefficients: Treated × Post + Treated × Post × Corruption	0.117	0.009	0.017	-0.012	-0.016	-0.06	-0.06
F-test	8.63***	3.72*	3.59*	5.72**	5.22**	6.01**	5.25**
Observations	2,559	2,429	2,416	2,078	2,060	1,738	1,720
Adjusted R-squared	0.359	0.938	0.937	0.931	0.930	0.928	0.926

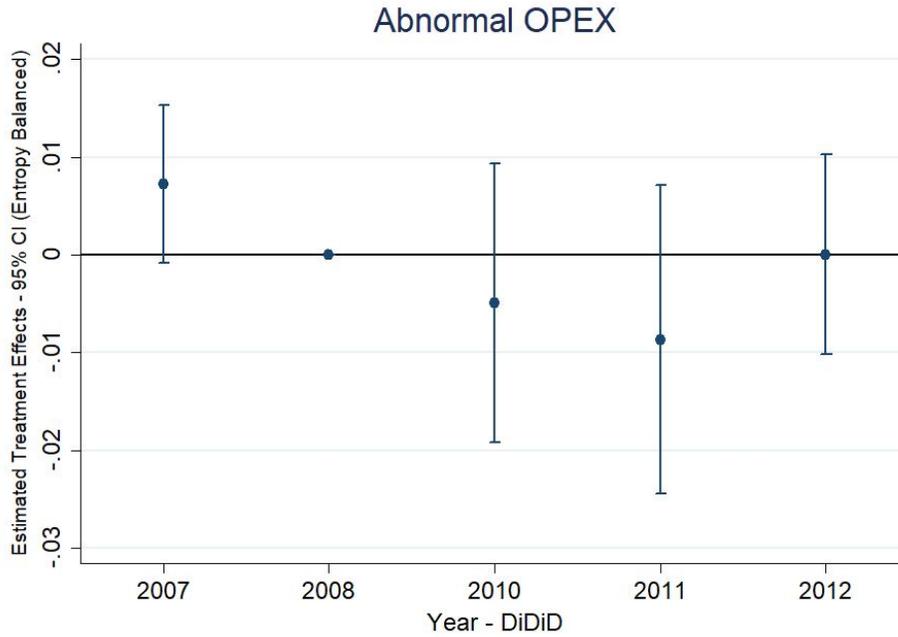
Notes: This table shows the effect of the UK Bribery Act and corruption exposure on audit pricing in the post-BA period, 2010-2012, compared to the pre-BA period, 2006-2008. The sample is not subject to a matching method. The dependent variable is the natural logarithm of audit fees paid by the parent company. Columns (1)-(3) show the results of the whole sample. Columns (4) and (5) show the effect of the UK BA on the whole sample after excluding FCPA firms and columns (6) and (7) shows the effect of the act on the OECD sample. Fixed Effects are as indicated. Clustering of standard errors is at country level. T-statistics are reported in parentheses. All variables are as defined in Appendix 1. \*, \*\*, and \*\*\* represent significance levels of 10%, 5%, and 1%, two-tail levels respectively.

TABLE IA7:  
Effect of exposure to corruption on abnormal OPEX

<b>Dependent Variable: Abnormal OPEX</b>	<b>All</b>	<b>Non-FCPA</b>	<b>OECD</b>
	(1)	(2)	(3)
Treated × Post	-0.006 (-0.298)	-0.007 (-0.332)	-0.014 (-0.645)
Treated × Post × Corruption	0.004 (0.185)	0.002 (0.116)	0.011 (0.499)
Controls	Y	Y	Y
Firm FE	Y	Y	Y
Year-Industry FE	Y	Y	Y
Sum of Coefficients: Treated × Post + Treated × Post × Corruption	-0.002	-0.005	-0.003
F-test	0.06	0.05	0.34
Observations	2,210	2,189	1,887
Adjusted R-squared	0.675	0.673	0.697

*Notes:* This table shows the effect of the UK Bribery Act and corruption exposure in the operating expenses component. The results are not subject to any matching method. Fixed Effects are as indicated. Clustering of standard errors is at country level. T-statistics are reported in parentheses.

**Figure IA1** Difference in trends in abnormal OPEX pre- and post- UK BA for for high and low level of exposure groups



*Notes:* Figure IA1 plots the differences in abnormal OPEX of high corruption exposure firms, treated vs control group, as compared to low corruption exposure firms, treated vs control group, in the pre- and post-UK BA period at a 95% confidence interval. We set the year prior to the UK BA enforcement (2008) as the base year, after deleting 2009 because it is considered of high uncertainty. The event year is set to be 2010 and we run the following regression after applying entropy balancing:

$$\text{Abnormal OPEX}_{i,t} = \beta_{i,1}\text{Exposure}_{i,t} + \beta_{i,2}\text{Treated} \times \text{Exposure}_{i,t} + \beta_{i,3}\text{Treated} \times T_{i,t-3} + \beta_{i,4}\text{Treated} \times T_{i,t-2} + \dots + \beta_{i,8}\text{Treated} \times T_{i,t+2} + \beta_{i,9}\text{Exposure}_{i,t-3} \times T_{i,t-3} + \dots + \beta_{i,14}\text{Exposure}_{i,t+2} \times T_{i,t+2} + \beta_{i,15}\text{Treated} \times T_{i,t-3} \times \text{Exposure}_{i,t-3} + \dots + \beta_{i,20}\text{Treated} \times T_{i,t+2} \times \text{Exposure}_{i,t+2} + \beta_{i,21}\text{Controls}_{i,t} + \alpha_i + \gamma_{\text{industry},t} + \epsilon_{i,t}$$

Where  $T_{i,t-n}$  equals one for firms  $n$ th year before the UK BA (i.e. before 2010) and  $T_{i,t+n}$  equals one for firms  $n$ th year after the UK BA (i.e. after 2010),  $\text{Controls}_{i,t}$  are firm control characteristics,  $\alpha_i$  are firm fixed effects and  $\gamma_t$  year interacted with industry fixed effects. The coefficient plot is constructed taking into account only the triple interactions in the regression.

# Bibliography

- (PCAOB), Public Company Accounting Oversight Board (2012a). *Maintaining and applying professional skepticism in audits. Staff Audit Practice Alert No. 10.*
- (2012b). *Staff audit practice alert No. 10: Maintaining and applying professional skepticism in audits.*
- Abbink, Klaus, Bernd Irlenbusch, and Elke Renner (2002). “An experimental bribery game”. In: *Journal of Law, economics, and organization* 18.2, pp. 428–454.
- Aghababaei, Naser and Agata Błachnio (2015). “Well-being and the Dark Triad”. In: *Personality and individual differences* 86, pp. 365–368.
- Aghababaei, Naser, Somayeh Mohammadtabar, and Majid Saffarinia (2014). “Dirty Dozen vs. the H factor: Comparison of the Dark Triad and Honesty–Humility in prosociality, religiosity, and happiness”. In: *Personality and Individual Differences* 67, pp. 6–10.
- Amiram, Dan et al. (2018). “Financial reporting fraud and other forms of misconduct: a multidisciplinary review of the literature”. In: *Review of Accounting Studies* 23.2, pp. 732–783.
- Andvig, Jens Chr and Karl Ove Moene (1990). “How corruption may corrupt”. In: *Journal of Economic Behavior & Organization* 13.1, pp. 63–76.
- Aobdia, Daniel (2019). “Do practitioner assessments agree with academic proxies for audit quality? Evidence from PCAOB and internal inspections”. In: *Journal of Accounting and Economics* 67.1, pp. 144–174.
- Armantier, Olivier and Amadou Boly (2011). “A controlled field experiment on corruption”. In: *European Economic Review* 55.8, pp. 1072–1082.

- 
- Asare, Stephen K, Gregory M Trompeter, and Arnold M Wright (2000). "The effect of accountability and time budgets on auditors' testing strategies". In: *Contemporary Accounting Research* 17.4, pp. 539–560.
- Ashton, Michael C, Kibeom Lee, and Chongnak Son (2000). "Honesty as the sixth factor of personality: Correlations with Machiavellianism, primary psychopathy, and social adroitness". In: *European Journal of Personality* 14.4, pp. 359–368.
- Atanasov, Vladimir A and Bernard S Black (2016). "Shock-based causal inference in corporate finance and accounting research". In: *Critical Finance Review* 5, pp. 207–304.
- Bae, Gil Soo et al. (2017). "Auditors and client investment efficiency". In: *The Accounting Review* 92.2, pp. 19–40.
- Baiman, Stanley (1982). "Agency research in management accounting: a survey". In: *Journal of Accounting literature* 1.1, pp. 154–210.
- Baiman, Stanley and Barry L Lewis (1989). "An experiment testing the behavioral equivalence of strategically equivalent employment contracts". In: *Journal of Accounting Research* 27.1, pp. 1–20.
- Bamber, E Michael and Venkataraman M Iyer (2007). "Auditors' identification with their clients and its effect on auditors' objectivity". In: *Auditing: A Journal of Practice & Theory* 26.2, pp. 1–24.
- Bazerman, Max H and Don Moore (2011). "Is it time for auditor independence yet?" In: *Accounting, Organizations and Society* 36.4-5, pp. 310–312.
- Bazerman, Max H, Kimberly P Morgan, and George F Loewenstein (1997). "The impossibility of auditor independence". In: *Sloan Management Review* 38, pp. 89–94.
- Bell, Timothy B, Wayne R Landsman, and Douglas A Shackelford (2001). "Auditors' perceived business risk and audit fees: Analysis and evidence". In: *Journal of Accounting research* 39.1, pp. 35–43.
- Benston, George J (2006). "Fair-value accounting: A cautionary tale from Enron". In: *Journal of Accounting and Public Policy* 25.4, pp. 465–484.

- 
- Bereczkei, Tamas et al. (2013). "Neural correlates of Machiavellian strategies in a social dilemma task". In: *Brain and cognition* 82.1, pp. 108–116.
- Bond, Philip (2008). "Persistent court corruption". In: *The Economic Journal* 118.531, pp. 1333–1353.
- Bowers, Kenneth S (1973). "Situationism in psychology: an analysis and a critique." In: *Psychological review* 80.5, p. 307.
- Bowlin, Kendall O, Jessen L Hobson, and M David Piercey (2015). "The effects of auditor rotation, professional skepticism, and interactions with managers on audit quality". In: *The Accounting Review* 90.4, pp. 1363–1393.
- Bronson, Scott N, Alope Ghosh, and Chris E Hogan (2017). "Audit fee differential, audit effort, and litigation risk: An examination of ADR firms". In: *Contemporary Accounting Research* 34.1, pp. 83–117.
- Brooks, Leonard J and Paul Dunn (2004). "Business and Professional Ethics for Directors". In: *Executives, and Accountants, 3rd ed., South-Western University Publishing, Cincinnati, OH.*
- Brunetti, Aymo and Beatrice Weder (2003). "A free press is bad news for corruption". In: *Journal of Public economics* 87.7-8, pp. 1801–1824.
- Buffett, Mary and David Clark (2006). *The tao of Warren Buffett: Warren Buffett's words of wisdom: Quotations and interpretations to help guide you to billionaire wealth and enlightened business management.* Simon and Schuster.
- Burguet, Roberto, Juan José Ganuza, and José Garcia Montalvo (2016). "The microeconomics of corruption. a review of thirty years of research". In:
- Cahan, Steven F, David Emanuel, and Jerry Sun (2009). "Are the reputations of the large accounting firms really international? Evidence from the Andersen-Enron affair". In: *Auditing: A Journal of Practice & Theory* 28.2, pp. 199–226.
- Cameran, Mara, Annalisa Prencipe, and Marco Trombetta (2016). "Mandatory audit firm rotation and audit quality". In: *European accounting review* 25.1, pp. 35–58.

- 
- Cao, Ying, Linda A Myers, and Thomas C Omer (2012). "Does company reputation matter for financial reporting quality? Evidence from restatements". In: *Contemporary Accounting Research* 29.3, pp. 956–990.
- Caramanis, Constantinos and Clive Lennox (2008). "Audit effort and earnings management". In: *Journal of accounting and economics* 45.1, pp. 116–138.
- Carey, Peter and Roger Simnett (2006). "Audit partner tenure and audit quality". In: *The accounting review* 81.3, pp. 653–676.
- Chan, K Hung, Ellen Jin Jiang, and Phyllis Lai Lan Mo (2017). "The effects of using bank auditors on audit quality and the agency cost of bank loans". In: *Accounting Horizons* 31.4, pp. 133–153.
- Chaney, Paul K and Kirk L Philipich (2002). "Shredded reputation: The cost of audit failure". In: *Journal of accounting research* 40.4, pp. 1221–1245.
- Chen, Long, Gopal V Krishnan, and Wei Yu (2018). "The relation between audit fee cuts during the global financial crisis and earnings quality and audit quality". In: *Advances in accounting* 43, pp. 14–31.
- Chiaburu, Dan S, Gonzalo J Muñoz, and Richard G Gardner (2013). "How to spot a careerist early on: Psychopathy and exchange ideology as predictors of careerism". In: *Journal of business ethics* 118.3, pp. 473–486.
- Choi, Jong-Hag et al. (2010). "Audit office size, audit quality, and audit pricing". In: *Auditing: A Journal of practice & theory* 29.1, pp. 73–97.
- Christensen, HANS B, MG Maffett, and THOMAS Rauter (2020). "Policeman for the World: The Rise in Extraterritorial FCPA Enforcement and Foreign Investment Competition". In:
- Christensen, Hans B et al. (2017). "The real effects of mandated information on social responsibility in financial reports: Evidence from mine-safety records". In: *Journal of Accounting and Economics* 64.2-3, pp. 284–304.
- Christie, Richard and Florence Geis (1968). "Some consequences of taking Machiavelli seriously". In: *Handbook of personality theory and research*, pp. 959–973.

- 
- Citron, David B and Richard J Taffler (1992). "The audit report under going concern uncertainties: an empirical analysis". In: *Accounting and business research* 22.88, pp. 337–345.
- Cooper, David J, Tina Dacin, and Donald Palmer (2013). "Fraud in accounting, organizations and society: Extending the boundaries of research". In: *Accounting, Organizations & Society* 38.6-7, pp. 440–457.
- Coram, Paul, Juliana Ng, and David R Woodliff (2004). "The effect of risk of misstatement on the propensity to commit reduced audit quality acts under time budget pressure". In: *Auditing: A Journal of Practice & Theory* 23.2, pp. 159–167.
- Cuervo-Cazurra, Alvaro (2008). "The effectiveness of laws against bribery abroad". In: *Journal of International Business Studies* 39.4, pp. 634–651.
- D'Souza, Anna and Daniel Kaufmann (2013). "Who bribes in public contracting and why: worldwide evidence from firms". In: *Economics of Governance* 14.4, pp. 333–367.
- DeAngelo, Linda Elizabeth (1981). "Auditor size and audit quality". In: *Journal of accounting and economics* 3.3, pp. 183–199.
- Dechow, Patricia M and Ilia D Dichev (2002). "The quality of accruals and earnings: The role of accrual estimation errors". In: *The accounting review* 77.s-1, pp. 35–59.
- Dechow, Patricia M, Sagar P Kothari, and Ross L Watts (1998). "The relation between earnings and cash flows". In: *Journal of accounting and Economics* 25.2, pp. 133–168.
- DeFond, Mark and Jieying Zhang (2014). "A review of archival auditing research". In: *Journal of accounting and economics* 58.2-3, pp. 275–326.
- Dierickx, Ingemar and Karel Cool (1989). "Asset stock accumulation and sustainability of competitive advantage". In: *Management science* 35.12, pp. 1504–1511.
- Donelson, Dain C, Matthew S Ege, and Justin Leiby (2019). "Audit firm reputational consequences of alleged non-accounting misconduct by clients: How bargaining power temporarily shifts around securities litigation". In: *Auditing: A Journal of Practice & Theory* 38.4, pp. 77–100.
- Dopuch, Nicholas, Ronald R King, and Rachel Schwartz (2001). "An experimental investigation of retention and rotation requirements". In: *Journal of Accounting Research* 39.1, pp. 93–117.

- 
- Dou, Ying and Emma Jincheng Zhang (2018). "Distracted Auditors". In: Ernstberger, Jürgen et al. (2017). "The real effects of mandatory quarterly reporting". In: *The Accounting Review* 92.5, pp. 33–60.
- Ettredge, Michael, Elizabeth E Fuerherm, et al. (2017). "Client pressure and auditor independence: Evidence from the "great recession" of 2007–2009". In: *Journal of Accounting and Public Policy* 36.4, pp. 262–283.
- Ettredge, Michael, Elizabeth Emeigh Fuerherm, and Chan Li (2014). "Fee pressure and audit quality". In: *Accounting, Organizations and Society* 39.4, pp. 247–263.
- Evans III, John H et al. (2001). "Honesty in managerial reporting". In: *The Accounting Review* 76.4, pp. 537–559.
- Farmer, Timothy A, Larry E Rittenberg, and Gregoiy M Trompeter (1987). "An Investigation of the impact of economic and organizational-factors on auditor independence". In: *Auditing-a Journal of Practice & Theory* 7.1, pp. 1–14.
- Fellingham, John C and D Paul Newman (1985). "Strategic considerations in auditing". In: *Accounting Review*, pp. 634–650.
- Ferguson, Andrew, Jere R Francis, and Donald J Stokes (2003). "The effects of firm-wide and office-level industry expertise on audit pricing". In: *The accounting review* 78.2, pp. 429–448.
- Fiolleau, Krista et al. (2013). "How do regulatory reforms to enhance auditor independence work in practice?" In: *Contemporary Accounting Research* 30.3, pp. 864–890.
- Fischbacher, Urs and Ulrike Stefani (2007). "Strategic errors and audit quality: An experimental investigation". In: *The Accounting Review* 82.3, pp. 679–704.
- Fleeson, William (2001). "Toward a structure-and process-integrated view of personality: Traits as density distributions of states." In: *Journal of personality and social psychology* 80.6, p. 1011.
- Focke, Florens, Ernst Maug, and Alexandra Niessen-Ruenzi (2017). "The impact of firm prestige on executive compensation". In: *Journal of Financial Economics* 123.2, pp. 313–336.
- Fombrun, Charles and Mark Shanley (1990). "What's in a name? Reputation building and corporate strategy". In: *Academy of management Journal* 33.2, pp. 233–258.

- 
- Francis, Jennifer et al. (2005). "The market pricing of accruals quality". In: *Journal of accounting and economics* 39.2, pp. 295–327.
- Francis, Jere R, Mihir N Mehta, and Wanli Zhao (2017). "Audit office reputation shocks from gains and losses of major industry clients". In: *Contemporary Accounting Research* 34.4, pp. 1922–1974.
- Francis, Jere R and Paul N Michas (2013). "The contagion effect of low-quality audits". In: *The Accounting Review* 88.2, pp. 521–552.
- Francis, Jere R, Paul N Michas, and Michael D Yu (2013). "Office size of Big 4 auditors and client restatements". In: *Contemporary Accounting Research* 30.4, pp. 1626–1661.
- Francis, Jere R, Donald J Stokes, and Don Anderson (1999). "City markets as a unit of analysis in audit research and the re-examination of Big 6 market shares". In: *Abacus* 35.2, pp. 185–206.
- Francis, Jere R and Michael D Yu (2009). "Big 4 office size and audit quality". In: *The accounting review* 84.5, pp. 1521–1552.
- Gago-Rodriguez, Susana, Gilberto Márquez-Illescas, and Manuel Núñez-Nickel (2020). "Denial of corruption: Voluntary disclosure of bribery information". In: *Journal of business ethics* 162.3, pp. 609–626.
- Garven, Sarah A, Amanda W Beck, and Linda M Parsons (2018). "Are audit-related factors associated with financial reporting quality in nonprofit organizations?" In: *Auditing: A Journal of Practice & Theory* 37.1, pp. 49–68.
- Ghosh, Alope and Doocheol Moon (2005). "Auditor tenure and perceptions of audit quality". In: *The accounting review* 80.2, pp. 585–612.
- Ghosh, Alope and Subprasiri Siriviriyakul (2018). "Quasi rents to audit firms from longer tenure". In: *Accounting Horizons* 32.2, pp. 81–102.
- Hackenbrack, Karl E, Nicole Thorne Jenkins, and Mikhail Pevzner (2014). "Relevant but delayed information in negotiated audit fees". In: *Auditing: A Journal of Practice & Theory* 33.4, pp. 95–117.

- 
- Hainmueller, Jens (2012). "Entropy balancing for causal effects: A multivariate reweighting method to produce balanced samples in observational studies". In: *Political analysis*, pp. 25–46.
- Ham, Charles et al. (2017). "CFO narcissism and financial reporting quality". In: *Journal of Accounting Research* 55.5, pp. 1089–1135.
- Harrison, Andrew, James Summers, and Brian Mennecke (2018). "The effects of the dark triad on unethical behavior". In: *Journal of Business Ethics* 153.1, pp. 53–77.
- Healy, Paul M and Krishna G Palepu (2003). "The fall of Enron". In: *Journal of economic perspectives* 17.2, pp. 3–26.
- Heo, Jin Suk, Soo Young Kwon, and Hun-Tong Tan (2020). "Auditors' Responses to Workload Imbalance and the Impact on Audit Quality". In: *Contemporary Accounting Research*.
- Hodson, Gordon et al. (2018). "Is the dark triad common factor distinct from low honesty-humility?" In: *Journal of Research in Personality* 73, pp. 123–129.
- Houque, Muhammad Nurul et al. (2019). "What is the impact of corruption on audit fees?" In: *Public Money & Management* 39.2, pp. 123–131.
- Houston, Richard W (1999). "The effects of fee pressure and client risk on audit seniors' time budget decisions". In: *Auditing: a journal of practice & theory* 18.2, pp. 70–86.
- Huang, Hua-Wei et al. (2015). "Fee discounting and audit quality following audit firm and audit partner changes: Chinese evidence". In: *The Accounting Review* 90.4, pp. 1517–1546.
- Jha, Anand, Manoj Kulchania, and Jared Smith (2021). "US political corruption and audit fees". In: *The Accounting Review* 96.1, pp. 299–324.
- Johnson, Eric N et al. (2013). "Auditor perceptions of client narcissism as a fraud attitude risk factor". In: *Auditing: A Journal of Practice & Theory* 32.1, pp. 203–219.
- Johnson, Van E, Inder K Khurana, and J Kenneth Reynolds (2002). "Audit-firm tenure and the quality of financial reports". In: *Contemporary accounting research* 19.4, pp. 637–660.
- Jonason, Peter K and Jessica McCain (2012). "Using the HEXACO model to test the validity of the Dirty Dozen measure of the Dark Triad". In: *Personality and Individual Differences* 53.7, pp. 935–938.

- 
- Jones, Daniel N and Delroy L Paulhus (2014). "Introducing the short dark triad (SD3) a brief measure of dark personality traits". In: *Assessment* 21.1, pp. 28–41.
- (2011). "The role of impulsivity in the Dark Triad of personality". In: *Personality and Individual Differences* 51.5, pp. 679–682.
- Jones, Jennifer J (1991). "Earnings management during import relief investigations". In: *Journal of accounting research* 29.2, pp. 193–228.
- Judge, Timothy A, Ronald F Piccolo, and Tomek Kosalka (2009). "The bright and dark sides of leader traits: A review and theoretical extension of the leader trait paradigm". In: *The leadership quarterly* 20.6, pp. 855–875.
- Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi (2011). "The Worldwide Governance Indicators: Methodology and Analytical Issues<sup>1</sup>". In: *Hague journal on the rule of law* 3.2, pp. 220–246.
- Kelley, Tim and Loren Margheim (1990). "The impact of time budget pressure, personality, and leadership variables on dysfunctional auditor behavior". In: *Auditing-A Journal Of Practice & Theory* 9.2, pp. 21–42.
- Keynes, John Maynard et al. (1930). "Treatise on money". In:
- Kim, Peter H and Alison R Fragale (2005). "Choosing the path to bargaining power: an empirical comparison of BATNAs and contributions in negotiation." In: *Journal of Applied Psychology* 90.2, p. 373.
- Klein, Benjamin and Keith B Leffler (1981). "The role of market forces in assuring contractual performance". In: *Journal of political Economy* 89.4, pp. 615–641.
- Kothari, Sagar P, Andrew J Leone, and Charles E Wasley (2005). "Performance matched discretionary accrual measures". In: *Journal of accounting and economics* 39.1, pp. 163–197.
- Krishnamurthy, Srinivasan, Jian Zhou, and Nan Zhou (2006). "Auditor reputation, auditor independence, and the stock-market impact of Andersen's indictment on its client firms". In: *Contemporary Accounting Research* 23.2, pp. 465–490.
- Krishnan, Gopal V (2005). "Did Houston clients of Arthur Andersen recognize publicly available bad news in a timely fashion?" In: *Contemporary Accounting Research* 22.1, pp. 165–193.

- 
- Lambert, Tamara A et al. (2017). "Audit time pressure and earnings quality: An examination of accelerated filings". In: *Accounting, Organizations and Society* 58, pp. 50–66.
- Lange, Donald, Peggy M Lee, and Ye Dai (2011). "Organizational reputation: A review". In: *Journal of management* 37.1, pp. 153–184.
- Lapré, Michael A, Amit Shankar Mukherjee, and Luk N Van Wassenhove (2000). "Behind the learning curve: Linking learning activities to waste reduction". In: *Management Science* 46.5, pp. 597–611.
- Lawson, Bradley P et al. (2019). "How do auditors respond to FCPA risk?" In: *Auditing: A Journal of Practice & Theory* 38.4, pp. 177–200.
- Lee, Kibeom et al. (2013). "Sex, power, and money: Prediction from the Dark Triad and Honesty–Humility". In: *European Journal of Personality* 27.2, pp. 169–184.
- Lennox, Clive and Bing Li (2014). "Accounting misstatements following lawsuits against auditors". In: *Journal of Accounting and Economics* 57.1, pp. 58–75.
- Leuz, Christian, Dhananjay Nanda, and Peter D Wysocki (2003). "Earnings management and investor protection: an international comparison". In: *Journal of financial economics* 69.3, pp. 505–527.
- Li, Chan (2009). "Does client importance affect auditor independence at the office level? Empirical evidence from going-concern opinions". In: *Contemporary Accounting Research* 26.1, pp. 201–230.
- Libby, Robert and William R Kinney Jr (2000). "Does mandated audit communication reduce opportunistic corrections to manage earnings to forecasts?" In: *The Accounting Review* 75.4, pp. 383–404.
- López, Dennis M and Gary F Peters (2012). "The effect of workload compression on audit quality". In: *Auditing: A Journal of Practice & Theory* 31.4, pp. 139–165.
- Luft, Joan L (1997). "Fairness, ethics and the effect of management accounting on transaction costs". In: *Journal of Management Accounting Research* 9, p. 199.

- 
- Lyon, John D and Michael W Maher (2005). "The importance of business risk in setting audit fees: Evidence from cases of client misconduct". In: *Journal of Accounting Research* 43.1, pp. 133–151.
- Maher, Michael W (1981). "1980 Competitive Manuscript Award: The Impact of Regulation on Controls: Firms' Response to the Foreign Corrupt Practices Act". In: *Accounting Review*, pp. 751–770.
- Majors, Tracie M (2016). "The interaction of communicating measurement uncertainty and the dark triad on managers' reporting decisions". In: *The Accounting Review* 91.3, pp. 973–992.
- Mauro, Paolo (1995). "Corruption and growth". In: *The quarterly journal of economics* 110.3, pp. 681–712.
- McDaniel, Linda S (1990). "The effects of time pressure and audit program structure on audit performance". In: *Journal of Accounting Research* 28.2, pp. 267–285.
- McNichols, Maureen F (2002). "Discussion of the quality of accruals and earnings: The role of accrual estimation errors". In: *The accounting review* 77.s-1, pp. 61–69.
- Minutti-Meza, Miguel (2014). "Issues in examining the effect of auditor litigation on audit fees". In: *Journal of Accounting Research, Forthcoming*.
- Mo, Pak Hung (2001). "Corruption and economic growth". In: *Journal of comparative economics* 29.1, pp. 66–79.
- Moore, Jared Allen (2006). *Do board and audit committee independence affect tax reporting aggressiveness?* Arizona State University.
- Morf, Carolyn C and Frederick Rhodewalt (2001). "Unraveling the paradoxes of narcissism: A dynamic self-regulatory processing model". In: *Psychological inquiry* 12.4, pp. 177–196.
- Muris, Peter et al. (2017). "The malevolent side of human nature: A meta-analysis and critical review of the literature on the dark triad (narcissism, Machiavellianism, and psychopathy)". In: *Perspectives on Psychological Science* 12.2, pp. 183–204.
- Myers, James N, Linda A Myers, and Thomas C Omer (2003). "Exploring the term of the auditor-client relationship and the quality of earnings: A case for mandatory auditor rotation?" In: *The accounting review* 78.3, pp. 779–799.

- 
- No, Auditing Standard (2004). "An Audit of Internal Control Over Financial Reporting Performed in Conjunction with An Audit of Financial Statements". In: *AUDITING*.
- Olken, Benjamin A and Patrick Barron (2009). "The simple economics of extortion: evidence from trucking in Aceh". In: *Journal of Political Economy* 117.3, pp. 417–452.
- Pacini, Carl, Judyth A Swingen, and Hudson Rogers (2002). "The role of the OECD and EU Conventions in combating bribery of foreign public officials". In: *Journal of Business Ethics* 37.4, pp. 385–405.
- Paulhus, Delroy L and Kevin M Williams (2002). "The dark triad of personality: Narcissism, Machiavellianism, and psychopathy". In: *Journal of research in personality* 36.6, pp. 556–563.
- Peiffer, Caryn and Richard Rose (2018). "Why are the poor more vulnerable to bribery in Africa? The institutional effects of services". In: *The Journal of Development Studies* 54.1, pp. 18–29.
- Power, Michael (2013). "The apparatus of fraud risk". In: *Accounting, organizations and society* 38.6-7, pp. 525–543.
- Quinn, Phillip J (2018). "Shifting corporate culture: executive stock ownership plan adoptions and incentives to meet or just beat analysts' expectations". In: *Review of Accounting Studies* 23.2, pp. 654–685.
- Reed, Richard and Robert J DeFillippi (1990). "Causal ambiguity, barriers to imitation, and sustainable competitive advantage". In: *Academy of management review* 15.1, pp. 88–102.
- Reynolds, J Kenneth and Jere R Francis (2000). "Does size matter? The influence of large clients on office-level auditor reporting decisions". In: *Journal of accounting and economics* 30.3, pp. 375–400.
- Rhode, John Grant (1978). "Survey on the influence of selected aspects of the auditor's work environment on professional performance of certified public accountants". In: *New York*.
- Roberts, Peter W and Grahame R Dowling (2002). "Corporate reputation and sustained superior financial performance". In: *Strategic management journal* 23.12, pp. 1077–1093.
- Roychowdhury, Sugata (2006). "Earnings management through real activities manipulation". In: *Journal of accounting and economics* 42.3, pp. 335–370.

- 
- Sanseverino, Amanda (2020). "The Impact of Anti-Corruption Laws: Evidence from the UK Bribery Act's Extraterritorial Reach". In:
- Seetharaman, Ananth, Ferdinand A Gul, and Stephen G Lynn (2002). "Litigation risk and audit fees: Evidence from UK firms cross-listed on US markets". In: *Journal of accounting and economics* 33.1, pp. 91–115.
- Sequeira, Sandra and Simeon Djankov (2014). "Corruption and firm behavior: Evidence from African ports". In: *Journal of International Economics* 94.2, pp. 277–294.
- Shleifer, Andrei and Robert W Vishny (1993). "Corruption". In: *The quarterly journal of economics* 108.3, pp. 599–617.
- Shockley, Randolph A (1981). "Perceptions of auditors' independence: An empirical analysis". In: *Accounting Review*, pp. 785–800.
- Shoda, Yuichi, Walter Mischel, and Jack C Wright (1994). "Intraindividual stability in the organization and patterning of behavior: Incorporating psychological situations into the idiographic analysis of personality." In: *Journal of personality and social psychology* 67.4, p. 674.
- Simunic, Dan A (1980). "The pricing of audit services: Theory and evidence". In: *Journal of accounting research*, pp. 161–190.
- Singer, Zvi and Jing Zhang (2018). "Auditor tenure and the timeliness of misstatement discovery". In: *The Accounting Review* 93.2, pp. 315–338.
- Skinner, Douglas J and Suraj Srinivasan (2012). "Audit quality and auditor reputation: Evidence from Japan". In: *The Accounting Review* 87.5, pp. 1737–1765.
- Stevens, Gregory W, Jacqueline K Deuling, and Achilles A Armenakis (2012). "Successful psychopaths: Are they unethical decision-makers and why?" In: *Journal of Business Ethics* 105.2, pp. 139–149.
- Tanyi, Paul N and Kristin C Roland (2017). "Market reaction to auditor ratification vote tally". In: *Accounting Horizons* 31.1, pp. 141–157.
- Vedel, Anna and Dorthe K Thomsen (2017). "The Dark Triad across academic majors". In: *Personality and Individual Differences* 116, pp. 86–91.

- 
- Venkataraman, Ramgopal, Joseph P Weber, and Michael Willenborg (2008). "Litigation risk, audit quality, and audit fees: Evidence from initial public offerings". In: *The Accounting Review* 83.5, pp. 1315–1345.
- Volmer, Judith, Iris K Koch, and Anja S Göritz (2016). "The bright and dark sides of leaders' dark triad traits: Effects on subordinates' career success and well-being". In: *Personality and Individual Differences* 101, pp. 413–418.
- Weber, Joseph, Michael Willenborg, and Jieying Zhang (2008). "Does auditor reputation matter? The case of KPMG Germany and ComROAD AG". In: *Journal of Accounting Research* 46.4, pp. 941–972.
- Wilson, Robert (1985). "Reputations in games and markets". In: *Game-theoretic models of bargaining*, pp. 27–62.
- Wu, Xun (2009). "Determinants of bribery in Asian firms: Evidence from the world business environment survey". In: *Journal of Business Ethics* 87.1, pp. 75–88.
- Xu, Hongkang, Mai Dao, and Alex Petkevich (2019). "Political corruption and auditor behavior: evidence from US firms". In: *European Accounting Review* 28.3, pp. 513–540.
- Yerkes, Robert M and John D Dodson (1908). "The relation of strength of stimulus to rapidity of habit-formation". In: *Journal of comparative neurology and psychology* 18.5, pp. 459–482.
- Zerni, Mikko (2012). "Audit partner specialization and audit fees: Some evidence from Sweden". In: *Contemporary Accounting Research* 29.1, pp. 312–340.
- Zeume, Stefan (2017). "Bribes and firm value". In: *The Review of Financial Studies* 30.5, pp. 1457–1489.
- Zhao, Yuping, Jean C Bedard, and Rani Hoitash (2017). "SOX 404, auditor effort, and the prevention of financial report misstatements". In: *Auditing: A Journal of Practice & Theory* 36.4, pp. 151–177.