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# Corporate Social Responsibility and the Auditors' Assessment of the Risk of Material Misstatement

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## Abstract

This paper investigates whether, and how, firms' Corporate Social Responsibility (CSR) Performance influences the auditors' assessment of the risk of material misstatement, whether due to fraud or error, at the financial statement level by analysing their pricing decision (i.e., audit fees). Using a panel data set of 12,330 firms from 28 countries over the period 2003-2012 and different measures of CSR performance, we find a U-shaped relationship between firms' CSR performance and audit fees. This result suggests that there is an optimal level of CSR performance that minimizes the auditors' assessment of the risk of material misstatement, which in turn lowers the need for greater auditor effort; that is why auditors charge firms significantly less when their CSR performance is at the optimal level. Finally, we also show that the optimal level of CSR performance varies with the degree of environmental dynamism, ownership concentration and leverage.

**Keywords:** Corporate Social Responsibility (CSR); CSR performance; Audit fees; Risk of material misstatement.

## 1. Introduction

The past two decades have witnessed a dramatic increase in the firms' engagement in Corporate Social Responsibility (CSR) in response to the needs and expectations of a wide range of stakeholders (Campbell, 2007; Waddock, 2008; Hoepner et al., 2016).<sup>1</sup> Meanwhile, numerous information intermediaries have emerged, rating firms across several dimensions of environmental and social performance, to provide credible CSR ratings and scores in a standardized and comparable way. The increasing interest in CSR, as well as the availability of CSR scores, has led to a proliferation of academic studies seeking to better understand its determinants and consequences (Huang and Watson, 2015).

Much of the existing literature on the consequences of CSR has focused on analysing the impact of CSR on different measures of firm performance (e.g., Margolis et al., 2007; Di Giuli and Kostovetsky, 2014; Eccles et al., 2014; Flammer, 2015; Lys et al., 2015), on firm value (e.g., Renneboog et al., 2008; Gregory and Whittaker, 2013; Gregory et al., 2016), on access to finance (e.g., El Ghouli et al., 2011; Goss and Roberts, 2011; Cheng et al., 2014; Hoepner et al., 2016), and on (post-audit) financial reporting quality<sup>2</sup> (e.g., Petrovits 2006; Chih et al., 2007; Prior et al., 2008; Kim et al., 2012), with the general conclusion that CSR affects all these dimensions but with mixed results. However, to the best of our knowledge, the relationship between CSR performance and the auditors' assessment of the risk of material misstatement, whether due to fraud or errors, at the financial statement level (i.e., the auditors' assessment of the risk that the financial report contains material misstatements before the

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<sup>1</sup> Increasingly, customers, investors, employees and other stakeholders are considering the firm's CSR in their decisions. To illustrate, a large number of institutional investors are signatories to the United Nations' "Principles for Responsible Investment" (UNPRI). The most recent UNPRI website reports 1718 investment institutions as signatories, representing 59 trillion of assets under management. Moreover, the socially responsible investing (SRI) movement has gained importance and professionally managed US assets tied to SRI, accounted for more than 3 trillion dollars in 2010 (Di Giuli and Kostovetsky, 2014). In addition, Nielsen's (2014, 2015) Global Survey on Corporate Social Responsibility shows that 67 percent of the 30,000 participant in 60 countries prefers to work for socially responsible companies, while 60 percent indicate that they are willing to pay more for products and services from companies that are committed to positive social and environmental actions (up from 50% in 2013).

<sup>2</sup> The existing literature on the link between CSR and financial reporting quality (Petrovits, 2006; Chih et al., 2007; Prior et al., 2008; Kim et al., 2012) analyses the link between CSR and earning quality constructs that are computed based on financial reports that are issued, not before but, after the completion of the audit. We therefore refer to this stream of literature as linking CSR to (post-audit) financial reporting quality.

audit is conducted, hereafter, the auditors' assessment of the risk of material misstatement<sup>3</sup>) is still far from known, and has received little attention from academics and policy makers.<sup>4</sup>

The current paper addresses this issue and investigates whether, and how, a firm's CSR performance influences the auditors' assessment of the risk of material misstatement, by analysing their pricing decision (i.e., audit fees). With this aim, we follow Mackey et al. (2007) and the European commission (2001) and consider CSR practices as the voluntary firm actions designed to improve social or environmental conditions. This concept of CSR corresponds to what Baron (2006) denominates Corporate Social Performance (or CSR performance).

Understanding the implications of CSR performance on the auditors' assessment of the risk of material misstatement is important for academics and policy makers, since this assessment affects the auditors' effort and evaluation of evidence (Hammersley et al., 2010) and ultimately the (post-audit) firms' financial reporting quality. In this sense, theory predicts that higher audit effort increases the likelihood of detected errors and reduces the likelihood of undetected errors at the financial statement level (Shibano, 1990; Matsumura and Tucker, 1992; Dye, 1993; Hribar et al., 2014), implying a positive relation between the audit effort and (post-audit) financial reporting quality. Empirically, Lobo and Zhao (2013) provide support for this prediction, finding a robust negative association between audit effort (measured by audit fees) and annual report restatements. Therefore our analysis may help to understand whether the audit effort is one mechanism through which CSR performance influences the (post-audit) financial reporting quality of firms and hence, whether it is an important omitted variable of prior studies that examine the effect of CSR performance on (post-audit) financial reporting quality (Petrovits, 2006; Chih et al., 2007; Prior et al., 2008; Kim et al., 2012).

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<sup>3</sup> Misstatements in the financial statements can arise from either fraud or error. In this paper, we focus on both types of misstatements. The distinguishing factor between fraud and error is whether the underlying action that results in the misstatement of the financial statements is intentional or unintentional. The International Standards on Auditing (ISAs), establish that two types of intentional misstatements are relevant to the auditor: misstatements resulting from fraudulent financial reporting and misstatements resulting from misappropriation of assets (ISA 240). Given the relevance of fraud, greater responses and procedures should be implemented when the auditor believes that there is risk of material misstatement due to fraud rather than to error (ISA 240).

<sup>4</sup> Anecdotal evidence reiterates the increasing role of CSR information in auditing. For example, the KPMG managing director, Eric Israel, noted at the 2010 Amsterdam Global Conference on Sustainability and Transparency that they have begun to better understand the implication of this information for their audits but that more work is needed. However, as far as we know, there is no empirical evidence on whether and how CSR performance influences the auditor's assessment of the risk of material misstatement and hence the audit fees.

We extract the auditors' assessment of the risk of material misstatement from the audit fees since they reflect the amount of effort that the auditors are expected to expend in the audit to fulfil its purpose (Srinidhi and Gul, 2007; Rice and Weber, 2012; Ghosh and Tang, 2015) and auditors respond to increases in misstatement risk by increasing their audit efforts (ISAs 330). The purpose of an audit is to obtain reasonable assurance on whether the financial statements as a whole are free from material misstatement. To obtain reasonable assurance, the auditor should gain sufficient appropriate audit evidence to reduce the risk of issuing an incorrect opinion on the financial statements (i.e., audit risk) to an acceptably low level (ISA 200). This audit risk is a function of the risk of material misstatement and the detection risk such that:

$$\text{Audit Risk} = \text{Risk of material misstatement in the financial statements} \times \text{Detection Risk}$$

The risk of material misstatement is the entity's risk and is outside the direct control of the auditor (it exists independently of the audit of the financial statements). In contrast, the detection risk is under the control of the auditor since it constitutes the risk that the procedures performed by the auditor to reduce the audit risk to an acceptably low level will not detect a misstatement that exists and that could be material either individually or when aggregated with other misstatements (ISA 200).

According to the audit risk model, auditors choose an acceptable level of audit risk and then assess the risk of material misstatement, which leads to the desirable level of detection risk (Houston et al., 1999). When the auditor's assessment of the risk of material misstatement is high, the detection risk needs to be held at a lower level to keep the audit risk at an acceptable level. Lower detection risk can be achieved by increasing the nature, timing and extent of the audit procedures. These actions in turn increase the cost of the audit, as they require more effort and/or the involvement of personnel with more overall or industry-specific experience<sup>5</sup> (Bedard and Biggs, 1991; Solomon et al., 1999; Johnstone and Bedard, 2003). Thus, auditors charge higher audit fees on engagements in which they assess the risk of material misstatement to be high. Conversely, when the auditor believes that the risk of material

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<sup>5</sup> Professional guidance suggests that the risk of material misstatement should lead the auditor to plan more hours (ISA 330). In addition, the positive linkage between the risk of material misstatement and audit work has been documented in prior studies (e.g., Hackenbrack and Knechel, 1997; Bell et al., 2001; Johnstone and Bedard, 2001).

misstatement is low, the detection risk can be set at a relatively higher level, reducing the audit effort or the specific experience of the engagement team and, hence, the audit fees (ISA 200).<sup>6</sup>

Auditors assess the risk of material misstatement by gaining an understanding of the entity and its environment, including the entity's internal control (ISA 315) and the incentives/pressures, opportunities, and attitudes/rationalizations that managers or employees may have to commit fraud (ISA 240). In doing so, the auditor obtains, among other things, an understanding of the entity's objectives and strategies, and of those related business risks<sup>7</sup> that may result in risks of material misstatement. The business risk is broader than the risk of material misstatement, though it includes the latter since most business risks will eventually have financial consequences and, therefore, an effect on the financial statements (ISA 315). For example, the business risk arising from a contracting customer base may increase the risk of material misstatement associated with the valuation of receivables or may increase manager's incentives/pressures to engage in fraudulent financial reporting. Thus, an increase in the firm's business risk should lead to an increase in the auditor's assessment of the risks of material misstatement. In this line, O'Keefe et al. (1994); Pratt and Stice (1994), Johnstone (2000), Lyon and Maher (2005) show that audit partners recommend higher audit effort and fees in response to higher business risk.

Building on resource dependence and agency theory, we claim that within certain limits, an increase in the firm's CSR performance is likely to reduce the auditor's assessment of the risk of material misstatement, and hence the audit fees, by reducing the firm's business risk. As CSR performance continues to increase, however, this positive effect of CSR performance on the reduction of the auditor's assessment of the risk of material misstatement is likely to level off and eventually turn into a negative effect because of increasing business risk and auditor's concerns related to the opportunistic use of CSR. Therefore, we posit that the CSR performance - audit fee relationship may

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<sup>6</sup> We restrict our sample to firms with Big-4 auditors. Similar to Ghosh and Tang (2014), we assume similar quality among the Big-4 auditors (i.e., we assume that they choose the same level of audit risk). Thus, for a given level of audit risk, higher levels of audit fees should reflect higher assessment of the risk of material misstatement by the auditor.

<sup>7</sup> We adopt the definition of business risk provided by ISA 315 which defines it as "a risk resulting from significant conditions, events, circumstances, actions or inactions that could adversely affect an entity's ability to achieve its objectives and execute its strategies, or from the setting of inappropriate objectives and strategies".

be described as a U-shape, such that there is an optimal level of CSR performance that minimizes the assessed risk of material misstatement and, as a result, the audit fees.

The general outline of our argument is as follows. For relatively low levels of CSR performance, an increase in the firm's CSR performance is likely to reduce the firm's business risk, and as a result the auditor's assessment of the risk of material misstatement, and hence the audit fees by a) enabling the firm to secure and retain critical resources controlled by various stakeholders (Hillman and Keim, 2001; Wang et al., 2008), and b) improving the firm's foresight capacity (Orlitzky et al., 2003), allowing managers to better anticipate the future and act timely to avoid negative consequences. As CSR performance continues to increase, however, this reduction effect of CSR performance on the firm's business risk will level off, and once a certain level of CSR performance is achieved, a further increase in the firm's CSR performance will eventually increase the auditor's assessment of the risk of material misstatement and the audit fees by increasing a) the firm's business risk (due to constraints on stakeholder support, direct costs, increasing risk of failing to deliver upon CSR promises, and stakeholders' concerns about the existence of agency problems within the firm); and b) the auditor's concerns about the opportunistic use of CSR.

Moreover, we posit that environmental dynamism, ownership concentration and leverage are likely to moderate the relationship between CSR performance and audit fees by influencing the auditors' assessment of the risk of material misstatement associated with a given level of CSR performance. On the one hand, in a dynamic environment, a firm is likely to be more dependent on its stakeholders for critical resources (Berman et al., 1999; Frooman, 1999) and to have a lower ability to accurately assess the impact of any environmental change on the firm (Milliken, 1987). We claim that in such situations, CSR performance becomes more important to reduce the firm's business risk and that, as a result, the degree of environmental dynamism may influence the CSR performance-audit fees relationship, increasing the level of CSR performance that minimizes the audit fees. On the other hand, the firm's degree of ownership concentration and leverage may also affect the relationship between CSR performance and audit fees, by influencing the auditor's concerns about agency problems linked to CSR performance. Consistent with Grossman and Hart (1980), Stulz (1990), Diamond (1991) and

Shleifer and Vishny (1997), we conjecture that when firms have a high degree of ownership concentration or leverage, the ability of managers to employ CSR performance for non-value maximizing reasons is limited (Barnea and Rubin, 2010), since owners and creditors play a more active monitoring role. In addition, the required payments under debt contracts also reduce the available funds that could be employed for non-value-maximizing CSR performance (Jensen, 1986). As a result, the level of CSR performance that minimizes the audit fees is likely to increase as the firm's ownership concentration and/or leverage become higher, since auditors may be less concerned about the opportunistic use of CSR.

To test our conjectures, we draw on a comprehensive international sample of listed firms from the most relevant stock market indices over the period 2003-2012. Similarly to Ioannou and Serafeim (2012) and Lys et al. (2015), our data on CSR comes from ASSET4, a Thomson Reuters database that provides objective, relevant and systematic scores on firms' environmental, social, economic, and governance performance, based on over 250 objective key performance indicators (KPIs) and over 750 individual data points. To measure CSR performance, we combine the social and environmental performance scores from ASSET4. Because audit quality and client characteristics vary between Big-4 and non-Big-4 audits (e.g., Craswell et al., 1995; Behn et al., 2008), we restrict our sample to firms with Big-4 auditors, similarly to Ghosh and Tang (2015), to avoid introducing any bias from variations in the sample composition.

Our results show a robust quadratic relationship between CSR performance and audit fees, so that there exist a level of CSR performance associated with minimal audit fees. In particular, the regression estimates indicate that audit fees are at a minimum level when the CSR performance score (which moves between 0 and 1) is equal to 0.35. Below (beyond) this point, audit fees decrease (increase), in an economic and statistically significant way, for each marginal increase in CSR performance. Consistent with our expectations, we also show that the optimal level of CSR performance increases for firms in dynamic environments and for firms with higher degrees of ownership concentration or leverage.



We conduct extensive tests to ensure the robustness of our results. First, to ensure that our results are not an artefact of size, which is one of the main drivers of audit fees (Hay et al., 2006), or of the relatively large proportion of US-firms in our sample, we re-estimate the audit fees regressions for different subsamples. In particular we split our sample between a) firms with smaller and larger than median yearly industry sales and b) US and non-US listed firms. We find consistent results across all subsamples. Second, we show that our results are not driven by a single dimension of our CSR performance measure as they hold for the social and environmental dimensions that make up this measure. Third, we show that our results are robust to using the D-SOCIAL-KLD measure of CSR performance developed by Carroll et al. (2016) on a subsample of US firms.<sup>8</sup> Finally, we estimate a proxy of the pre-audit misstatement risk as in Lobo and Zhao (2013) on a subsample of US firms, to provide additional support to our conjecture that there is an optimal level of CSR performance that minimizes the auditor's assessment of the risk of material misstatement. Our results provide support for this conjecture, showing a quadratic relationship between CSR performance and the pre-audit misstatement risk.

This paper contributes to the literature in several ways. First, we contribute to research that looks into factors that influence the auditor's assessment of the risk of material misstatement (e.g., Dechow et al, 1996; Bell and Carcello, 2000; Shelton et al., 2001; Bedard and Johnstone, 2004) and to the related literature on understanding the characteristics of firms with a higher risk of restatements (e.g., Dechow et al., 2010). To the best of our knowledge, this is the first study to explore the link between CSR performance and audit fees, and to propose a U-shaped relationship between these two variables. Bedard and Johnstone (2004) argue that one important challenge that audit firms face is to identify the riskiest clients from their portfolios and to plan and price those engagements. Our results suggest that auditors take CSR performance into account in their assessment of the risk of material misstatement such that there exists an optimal level of CSR performance that minimizes the audit fees. This finding may assist in the development of client acceptance and retention guidelines and could help to refine the traditional models of audit fees.

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<sup>8</sup> The D-SOCIAL-KLD measure is only available for US firms.

Second, we contribute to the literature on the relationship between CSR and (post-audit) financial reporting quality. Within this literature, two main results have emerged. On the one hand, Kim et al. (2012) find that CSR firms are less likely to engage in aggressive earnings management and in real activities manipulation and that their CEOs/CFOs are less likely to be the subject of SEC investigations of GAAP violations, consistent with ethical concerns driving managers to produce high-quality financial reports. On the other hand, Petrovits (2006) and Prior et al. (2008) report a negative relationship between CSR and (post-audit) financial reporting quality which is interpreted within the agency theory framework as the result of the opportunistic use of CSR. In particular, Petrovits (2006) find evidence of the strategic use of corporate philanthropy programs to achieve earnings targets, while Prior et al. (2008) report a positive link between CSR performance and earnings management and claim that managers may use CSR strategically to disguise earnings management. Finally, Chih et al. (2007) examine the link between CSR and earnings management but report conflicting results. Our study may help to further understand the mixed results found in this literature. Given the documented positive relation between audit fees and (post-audit) financial reporting quality (e.g., Shibano, 1990; Matsumura and Tucker, 1992; Dye, 1993; Hillegeist, 1999; Lobo and Zhao, 2013), our results points to audit effort as a mechanism through which CSR performance may influence the (post-audit) firm's financial reporting quality. In particular, our findings suggest that audit fees may be an important omitted variable for prior studies that examine the relationship between CSR performance and (post-audit) financial reporting quality. When analysing the relationship between CSR performance and (post-audit) financial reporting quality without controlling for audit fees, it may therefore not be possible to determine whether CSR performance increases the financial reporting quality directly, or whether the relationship works through increased audit effort. By examining the relationship between CSR performance and the auditor's assessment of the risk that the financial report contains material misstatements before the audit is conducted our analysis helps to provide a better understanding of whether CSR performance is linked to more transparent and reliable financial information provided by the firm (i.e., the pre-audit financial reporting quality).

Third, we argue and show that environmental dynamism, ownership concentration and leverage have a significant moderating effect on the CSR performance-audit fees relationship, which suggests that a firm's operating environment and corporate governance plays an important role in the effect that CSR performance has on the auditor's assessment of the risk of material misstatement. These findings respond to the call for the consideration of contingencies when studying CSR performance (McWilliams and Siegel, 2001; Barnett, 2007).

Finally, we employ a large international sample and present robustness findings across different subsamples and for different measures of CSR performance, providing external validity to our findings.

The remainder of the papers is structured as follows: section 2 develops our theoretical framework. Section 3 outlines our research design while section 4 describes our data and sample. Section 5 presents the results of our analyses. Section 6 reports the sensitivity analyses. Finally, Section 7 presents our conclusions and suggestions for further research.

## **2. Theoretical framework**

In this section, we develop the arguments that the relationship between CSR performance and the auditor's assessment of the risk of material misstatement, and hence the audit fees, is captured by a U-shape. We first revise the literature on the factors that influence the auditor's assessment of the risk of material misstatement. Then, we establish how CSR performance is likely to influence these factors, differentiating between positive and negative implications of CSR performance for the reduction of the auditor's assessment of the risk of material misstatement. Finally, we analyse the likely trends of these positive and negative implications, to propose a U-shaped relationship between CSR performance and audit fees.

### **2.1 Factors influencing the auditor's assessment of the risk of material misstatement.**

When planning the audit, the auditor has the responsibility to identify and assess the risks of material misstatement through understanding the entity and its environment (ISA 315), including the entity's internal control and the incentives/pressures, opportunities, and attitudes/rationalizations that

managers or employees may have to commit fraud<sup>9</sup>, thereby obtaining a basis for designing and implementing responses to the assessed risks of material misstatement.

One important aspect for the auditor to consider when assessing the risk of material misstatement is the firm's business risk since most business risks will eventually have financial consequences and therefore an effect on the financial statements (ISA 315). To illustrate, the business risk resulting from troubled customer relations may increase the risk that provisions for impairment of relevant accounts receivables are not made adequately. In addition, an increase in the firm's business risk may be considered by the auditor as a fraud risk factor as it may result in an incentive or pressure to engage in fraudulent financial reporting practices (ISA 240). For instance, if the financial stability or profitability is threatened by economic, industry, or entity operating conditions (such as significant declines in customer demand or flaws in a product or service that may result in liabilities and in a loss of reputation), managers or employees may face pressures or have incentives to commit fraudulent financial reporting through, for instance, inappropriate revenue recognition.<sup>10</sup>

A considerable stream of research (e.g., Colbert, 1988; Kizirian et al., 2005; Johnstone et al., 2014; Ghosh and Tang, 2015) has identified different factors that influence the firm's business risks and hence the auditor's assessment of the risk of material misstatement. This research suggests that the environment in which an organization operates (e.g., the state of the economy), the characteristics of its employees (e.g., ethical values, experience and turnover), the quality of information systems, the internal audit function, the management integrity and operating style as well as the financial position

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<sup>9</sup> Research on fraud risk and ISA 240 explains fraud as the interaction of three causal influences affecting a potential perpetrator: incentives/pressures, opportunities, and attitudes/rationalizations. Incentive results from a perceived pressure on a person to commit fraud. For example, management may be given large bonuses that are based on accounting income. Opportunity results from conditions that allow a person to commit fraud. For example, lack of appropriate monitoring may allow management to inappropriately manipulate reported earnings to reach analyst's forecasts. Attitude is what allows a person to rationalize the act of fraud. For instance, manager's unethical behaviour. Importantly, each of these factors is a necessary but not a sufficient condition for fraud, and as such, fraud risk assessment should consider the interaction of these factors (Wilks and Zimelman, 2004). As established by the ISAs, auditors should perform the fraud risk assessment when planning the audit to modify the nature, timing and extent of their audit procedures in case they perceive either incentives/pressures, opportunities, and attitudes/ rationalizations to commit financial fraud.

<sup>10</sup> For instance, Bristol-Myers Squibb agreed to pay \$150 million to settle fraud charges in 2004. The SEC alleged, among other things, that Bristol-Myers engaged in a fraudulent scheme to inflate its sales and earnings in order to meet its internal sales and earnings targets and analysts' earnings estimates.

and accounting practices of the organization (e.g., poor financial position and inadequate working capital) are important factors that affect the auditor's assessment of the risk of material misstatement.

We claim that the firm's CSR performance also influences the firm's business risk and the auditor's assessment of the risk of material misstatement. In elaborating this argument, we rely on resource dependence theory because it focuses on the influence of stakeholders on the firm's decision-making and its consequences (Pfeffer and Salancik, 1978). This theory suggests that because the allocation of the resources necessary for a firm's survival are often not fully controlled by the firm, but rather by key stakeholders, the firm faces uncertainty in securing and retaining those resources (Pfeffer and Salancik, 1978; Frooman, 1999). Thus, the auditor, in accessing the risk of material misstatement, may be concerned by the way the firm addresses and manages its stakeholder relations, being CSR one key mechanism to manage these relations. In what follows, we comment on how the firm's CSR performance may reduce or increase the auditor's assessment of the risk of material misstatement.

## **2.2 Positive implications of CSR performance for the reduction of the auditor's assessment of the risk material misstatement.**

We argue that CSR performance is likely to reduce the firm's business risk, and as a result the auditor's assessment of the risk of material misstatement, by a) enabling the firm to secure critical resources controlled by stakeholders, b) reducing the risk of losing resources it already controls and c) enhancing the firm's forecast ability.

First, as CSR performance explicitly considers the interests of various stakeholders into the firm's business model and operations, it may allow firms to expand the set of value-creating exchanges with its stakeholders and, as a result, to ensure critical resources controlled by the firm's key stakeholders, including current and prospective employees, customers, shareholders, regulators, and the community (Hillman and Keim, 2001; Wang et al., 2008).

According to the social identity theory, CSR has the potential to increase the work morale of employees and their efficiency (Edmans, 2011; Schmitz and Schrader, 2015) and to attract and retain high quality employees (Greening and Turban, 2000; Jones and Murrell, 2001). As a consequence,

employees of firms that engage in CSR may show greater commitment, higher ethical values, education or experience than employees of firms that do not engage in CSR. Higher moral standards, abilities and commitment of employees are likely to reduce their incentives and/or attitudes to engage in fraudulent financial reporting or in misappropriation of assets that may lead to misstatements. In this line, Gao et al. (2014) show that executives of CSR firms profit significantly less from insider trades and are less likely to trade prior to future news than executives of non-CSR firms. Therefore, since the reliability of the financial reporting process depends in good part, on the employees and management's integrity and ability to identify and discuss important financial reporting issues<sup>11</sup> (Cohen and Hanno, 2000), the firm's CSR performance may reduce the auditor's assessment of the risk of material misstatement, whether due to errors or fraud.

CSR performance may also help the firm to attract socially conscious consumers, which are generally willing to recompense CSR firms by increasing their demand for their products or services, by accepting higher prices or by showing greater loyalty (Waddock and Graves, 1997; Hillman and Keim, 2001; McWilliams and Siegel, 2001; Baron, 2008). CSR performance could thus be an instrument to gain sustainable competitive advantage (Porter and Kramer, 2006; Gregory et al., 2016; Hoepner et al., 2016) and to prevent consumer boycotts (Glazer et al., 2008), reducing the business risk, and as a result, the auditor's assessment of the risk of material misstatement.

Similarly, investors and creditors may be more willing to invest in firms with high levels of CSR performance (Graves and Waddock, 1994; Clarkson et al. 2004; Barnett and Salomon, 2006). Thus, CSR performance may reduce the firm's cost of financing and enhance its access to finance (Mackey et al., 2007; Cheng et al., 2014; Ioannou and Serafeim, 2015; Plumlee et al., 2015; Hoepner et al., 2016). This is evidenced by the growth of socially responsible investing (Di Giuli and Kostovetsky, 2014). Better investor relations through CSR performance may help to alleviate short term pressure on financial performance and to reduce the incentives to engage in fraudulent financial reporting or in misappropriation of assets that may lead to misstatements.

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<sup>11</sup> A study by KPMG (1999) on incidents of corporate fraud found that a majority of the cases were related to factors present in the control environment, such as a lack of management integrity.

Finally, CSR performance may also reduce the auditor's assessment of the risk of material misstatement by mitigating the likelihood of negative regulatory, legislative or fiscal actions (Freeman, 1984; Berman et al., 1999; Maxwell et al., 2000; Hillman and Keim, 2001), since regulators may be more supportive of CSR firms. In this spirit, Maxwell et al. (2000) present an adjustment model in which a reduction of emissions below the measure required by law lowers the probability of stricter regulations in the future. Thus, according to their model a firm can apply CSR activities to prevent a sharper regulation and hence to reduce the firm's business risk.

Second, CSR performance can also reduce the firm's business risk and hence the auditor's assessment of the risk of material misstatement by helping the firm to reduce the risk of losing resources it already controls (Brammer and Millington, 2004; Godfrey, 2005; Barnett and Salomon, 2006). In this sense, different studies have indicated that CSR performance a) should be regarded as a form of reputation building or maintenance (Fombrun and Shanley, 1990; McWilliams et al., 2006; Freeman et al., 2007; Gregory et al., 2016; Hoepner et al., 2016), b) produces insurance-like effects on the firm's stock and bond price (Godfrey, 2005; Godfrey et al., 2009; Pelozo, 2009; Minor and Morgan, 2011; Shiu and Yang, 2017) and c) helps poorly performing firms to recover from a disadvantageous position more quickly (Choi and Wang, 2009; Vanhamme and Grobbsen, 2009).

Third, research has shown that CSR performance improves the firm's foresight capacity (Waddock, 2002; Orlitzky et al., 2003), enabling the firm to better anticipate the future and to act in a timely manner regarding external changes and turbulence to avoid negative consequences. Increased competency in anticipating changes in the business environment may reduce the firm's business risk, improve management planning and decrease the risk of misstatements in inventory, accounts receivable, and other accounts, reducing the auditor's assessment of the risk of material misstatement.

### **2.3 Negative implications of CSR performance for the reduction of the auditor's assessment of the risk material misstatement.**

Although managerial discretion in CSR may enable managers to reduce the firm's business risk, it is equally reasonable to suspect that if there exists a principal-agent problem within the firm, for

example when the owners cannot perfectly control the behaviour of the manager, managers may use CSR performance as a means to advance their personal interests (Friedman, 1970) at the expense of the firm's owners and other stakeholders (Jensen and Meckling, 1976; Carroll, 1979; McWilliams et al., 2006; Surroca and Tribo, 2008). Specifically, managers may use CSR to increase their own reputation and awareness level within social circles, to further political or career agendas, as part of an entrenchment strategy (Surroca and Tribo, 2008), or to create an impression of transparency and ethical behaviour among stakeholders to cover up corporate misconduct (Hemingway and Maclagan, 2004) or earnings management (Prior et al., 2008). These opportunistic motivations of managers to engage in CSR might lead to excessively high levels of CSR performance from the owner's point of view and may create additional incentives for earnings manipulation. In this line, the literature has shown that opportunistic managers are more likely to mask non-optimal expenditures by accounting manipulation (De Angelo, 1988; Christie and Zimmerman, 1994; Warfield et al., 1995; Gul and Tsui, 1997). Thus, when CSR performance is the result of agency problems<sup>12</sup>, it is likely to increase a firm's business and fraud risk unless managerial misconduct can be constrained. In addition, CSR performance may also be the result of the existence of slack resources. In this situation, CSR performance is also likely to increase a firm's business and fraud risk since the existence of slack resources increases the risk of agency problems (Jensen and Meckling, 1976). Thus, if stakeholders perceive the firm's CSR performance as the result of managerial opportunism or as a signal of the existence of a large pool of slack resources, they may respond by withholding resources and support, leading to a further increase in the firm's business and fraud risk.

Therefore, CSR performance may increase the auditor's' assessment of the risk of material misstatement if auditors believe (or if they think that stakeholders believe) that a) managers act in their own interest when engaging in CSR at the expense of the firm's owners and other stakeholders, or b)

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<sup>12</sup> In this spirit, Cheng et al. (2013) find that that spending on CSR is partly related to agency problems. In their analysis they find a decline in CSR performance when manager's ownership of firms increases. They conclude that "some forms of goodness investment, not on the margin, may increase firm value; however, managers spend the marginal dollar on goodness because they wish to do good with other people's money". Similarly, Atkinson and Galaskiewicz (1988), focusing on one aspect of CSR – namely, charitable giving, show that firms with high levels of CEO ownership give less generously to charities than firms with low levels of CEO ownership. They interpret this finding as evidence of better alignment between CEO and shareholder incentives when CEO ownership is higher.



the firm's CSR performance is a signal of the existence of slack resources. Consistent with this idea, Gul and Tsui (1997) show that auditors under the presence of agency problems within the firm increase their assessment of the risk of material misstatement and, as a result, they exert greater effort and charge higher audit fees.

CSR performance may also increase the auditor's concerns about the competitiveness of the firms since achieving higher levels of CSR performance imposes increasing direct cost on the firm, such as the costs resulting from offering employee day care or paid parental leave, reducing the carbon footprint or donating to charity (Barnett and Salomon, 2006). In addition, as the CSR performance increases, there is likely to be an increase in the administrative and human resource costs, as firms may need to create specialist CSR departments and CSR initiatives generally require, at least some, dedication on the part of employees (McWilliams and Siegel, 2001; Brammer and Millington, 2004; Wang et al., 2008). These additional costs directly detract from the firm profitability, and so may place firms with high levels of CSR performance at a competitive disadvantage, relative to those with lower levels (Friedman, 1970; Jensen, 2001). Thus, the direct cost of CSR performance may affect the firm's ability to achieve its objectives and as a result increase its business and fraud risk. In this situation, manager may have greater incentives /pressure to commit fraudulent financial reporting through, for instance, inappropriate revenue recognition.

Finally, failure to adequately take care of negative environmental and social issues, while portraying a high level of CSR performance is likely to lead to reputational losses and to greater exposure to future operational risk which is likely to create incentives for manipulation. Thus, CSR performance may increase the auditor's concerns about the firm's risk of failing to deliver upon the CSR promises and, as a result, the assessment of the risk of material misstatement.<sup>13</sup>

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<sup>13</sup> For example, shares of oil giant BP plunged after its failure to stop the oil leak in the Gulf of Mexico in April 2010, eliminating more than \$23 billion in market value in one day—and more than \$67 billion in less than two month after the disaster began (Reuters, June 2, 2010). The shareholders' reaction, triggered by the inadequate handling of the leakages, provides some anecdotal evidence on the link between CSR practices and financial risk. In addition, the SEC alleges that BP made fraudulent public statements, underestimating the magnitude of the oil spill. BP agreed to settle the SEC's charges by paying \$525 million. Similarly, Volkswagen's historical commitment to CSR was strongly questioned after the emissions scandal came to light (Forbes, Sept. 27 2015).

## 2.4 The U-shaped relationship between CSR performance and audit fees

We propose that, up to a certain level of CSR performance, the positive implications of CSR performance for the reduction of the auditor's assessment of the risk of material misstatement outweigh the negative implications, such that an increase in CSR performance reduces the audit fees. However, as the CSR performance continues to increase, the positive implications start to level off while the negative implications become stronger, up to a level of CSR performance where the negative implications outweigh the positive implications such that an increase in CSR performance leads to an increase in the firm's audit fees. In Figure 1, we plot the likely trends of the positive and negative implications of CSR performance for the reduction of the auditor's assessment of the risk of material misstatement and their effect on the firm's audit fees, at various levels of CSR performance.

[Figure 1 about here]

As shown by curve A, the positive implications of CSR performance for the reduction of the auditor's assessment of the risk of material misstatement, are expected to reduce the audit fees at first because of positive stakeholder responses, insurance-like effects, as well as the development of competencies in dealing with external changes. However, the reduction of audit fees due to the positive implications of CSR performance (i.e., the slope of curve A) is expected to level off as CSR performance continues to increase for two main reasons.

First, despite stakeholders' greater willingness to provide critical resources to firms that engage in CSR, there are limits to the resources that socially inclined stakeholders are able and willing to invest in the firm. This puts a natural constraint on the reduction of the business risk, and hence on the reduction of the auditor's assessment of the risk of material misstatement and audit fees that a firm can obtain from CSR performance. For example, the ability to attract and retain better employees, and to foster ethical behaviour is unlikely to grow at a constant rate as CSR performance increases. In this line, Wright and Ferris (1997) provide evidence of a diminishing marginal effect of CSR on attracting investments, such that too much CSR displaces investments, regardless of investor's preferences. Similarly, Flammer (2015) shows that environmental CSR is a resource with decreasing marginal returns.

Second, as firms increase their CSR performance, they will inevitably transfer part of the cost to achieve a higher CSR performance to its stakeholders through, for example, lower wages, higher prices, or lower financial returns (McWilliams and Siegel, 2001). While CSR conscious stakeholders may be prepared to earn a lower wage, to pay a higher price, or to receive a lower financial return to support the firm's CSR performance, they however expect reasonable returns from their interaction with the firm, especially compared to alternative options (e.g., other firms with acceptable CSR performance levels). Thus, as CSR performance continues to increase, these stakeholders must, at some point, become reluctant to accept the terms of their interaction with the firm, and, as a result, start to reduce or withdraw their specific investments in the firm, increasing the firm's business risk and the auditor's assessment of the risk of material misstatement.

Regarding the auditor's concerns about the direct cost of CSR performance, represented by curve B, we believe that these concerns are likely to lead to an increase in the audit fees as CSR performance increases, but at a decreasing rate. Since there are important initial costs to set up CSR initiatives and to get employees and other stakeholders involved, the direct cost of CSR performance may at first increase the firm's business risk and, consequently, the auditor's assessment of the risk of material misstatement and the audit fees. However, due to learning effects and potential economies of scale linked to CSR performance, we expect the auditor's concerns about the direct cost of CSR performance to lead to an increase of the audit fees at a decreasing rate as CSR performance increases.

In terms of the auditor's concerns about the opportunistic use of CSR performance represented in curve C, we believe that these concerns are likely to be relatively small at low levels of CSR performance. However, as CSR performance increases, the auditor's concerns about the potential opportunistic use of CSR by managers are likely to become larger, leading to an increase in the audit fees. This may be so because a certain level of CSR performance is needed to raise suspicion about a dishonest use of CSR or about the existence of slack resources. We expect the auditor's concerns about the opportunistic use of CSR to eventually level off as CSR performance continues to increase because severe misbehaviour related to CSR is likely to be constrained by corporate governance mechanisms.

Finally, the risk of failure to adequately take care of negative environmental and social issues, is more important as CSR performance becomes higher. Thus, we expect the auditor's concerns about the firm's risk of failing to deliver upon the CSR promises represented in curve D, to lead to an increase of audit fees only at high levels of CSR performance.

Taking these opposing forces together, a U-shaped relationship between CSR performance and the audit fees emerges (curve E).

## **2.5. Contingency factors**

McWilliams and Siegel (2001) and Barnett (2007) call for adopting a contingency perspective when studying CSR to gain a better understanding of the underlying variables and processes involved. Building on our conceptual framework, we propose three contingency factors that are likely to influence the relationship between CSR performance and the auditor's assessment of the risk of material misstatement. In particular, we consider that, on the one hand, the degree of environmental dynamism is likely to enhance the positive implications of CSR performance for the reduction of the auditor's assessment of the risk of material misstatement by increasing the firm's dependence on its stakeholders for critical resources. On the other hand, we argue that the firm's degree of ownership concentration and leverage are likely to reduce the negative implications of CSR performance for the reduction of the auditor's assessment of the risk of material misstatement by reducing the agency concerns related to CSR performance. Therefore, we expect the optimal level of CSR performance to be higher in dynamic environments or in firms with a high degree of ownership concentration or leverage.

### **Environmental dynamism**

Environmental dynamism refers to the degree and the instability of changes in a firm's competitive environment (Dess and Beard, 1984; Boyd, 1990). Dynamic environments are characterized by greater environmental uncertainty, rapid changes in industry structure, the instability of market demand, and high probability of external shocks (e.g., Jansen et al., 2006; Levinthal and Myatt, 1994; Sirmon et al., 2007). We claim that in dynamic environments, the positive implications of

CSR performance for the reduction of the auditor's assessment of the risk of material misstatement are likely to be enhanced, for the following two reasons:

First, an increase in the degree of environmental dynamism reduces the firm's ability to a) accurately assess the impact of any environmental change on the firm and b) to determine the viable alternatives which managers can pursue and the potential impact of decision-making on current and future business activities (Milliken, 1987). In such situations, the positive implications of CSR performance for the reduction of the firm's business risk may be enhanced since stakeholder relations and higher foresight capacity become more important to ensure the firm's survival (Berman et al., 1999; Frooman, 1999). In this sense, Glazer et al. (2008) argue that in markets with higher product market competition, more CSR activities are to be expected, while Fernández-Kranz and Santaló (2010) show that product market competition is positively associated with CSR.

Second, a more dynamic environment increases the likelihood of unexpected events which may negatively impact some stakeholders. In the occurrence of such events, the firm risks losing the stakeholders' resource commitment and support (Godfrey 2005), which could lead to an increase in the firm's business risk, thus increasing the likelihood of errors in different accounts and the incentives for engaging in financial fraud. The firm's CSR performance may help to reduce the negative consequences of unexpected events by reducing the firm's risk of losing resources it already controls.

In contrast, the effect of environmental dynamism on the negative implications of CSR performance for the reduction of the auditor's assessment of the risk of material misstatement may not be significant. In particular, auditor's concerns that stem from the firm's failure to adequately address negative environmental and social issues or from the direct cost of CSR performance are less likely to shift because of environmental dynamism, while the concerns about agency problems may move upwards or downwards, making the net effect unclear. In dynamic environments managers may have greater ability to use CSR opportunistically as they require greater discretion in their decision-making (Galbraith, 1973). However, high environmental uncertainty may also require managers to allocate additional resources to deal with external shocks, which reduces the amount of slack resources (Farrell, 2001) that could be used opportunistically. In addition, in dynamic environments the opportunistic use

of CSR may have a stronger negative impact on stakeholder commitment, firm survival and the ability to achieve shareholder objectives. As a result, environmental dynamism may act as a deterrent of the opportunistic use of CSR. Taken together, these arguments suggest that environmental dynamism can influence the auditor's concerns about the opportunistic use of CSR in opposite directions and, as a result, we assume that they do not change in a significant way.

Thus, for all these reasons, we suggest that in a dynamic environment the level of CSR performance that minimizes the audit fees will be higher than in a less dynamic environment.

### **Ownership concentration and leverage**

We propose that the capital structure of the firm, in terms of the degree of ownership concentration and leverage may influence the negative implications of CSR performance for the reduction of the auditor's assessment of the risk of material misstatement by influencing the auditor's agency concerns associated with CSR performance.

Regarding the firm's ownership structure, Berle and Means (1932) argue that in publicly traded firms, diffuse ownership structures reduce shareholders' incentives to monitor managers' wasteful expenditures. In contrast, large stockholders can reduce manager-shareholder agency conflicts, because they have powerful incentives to monitor managers (Grossman and Hart, 1980; Shleifer and Vishny, 1997; Ke et al., 1999). McConnell and Servaes (1990) provides support for these claims as they demonstrate that shareholders who own large stakes in a firm are more effective monitors. Effective monitoring may reduce the risk of opportunistic use of CSR. In this line, the ISA 240 establishes that "ownership characteristics of the entity have a significant influence on the consideration of relevant fraud risk factors" by auditors, while Dechow et al. (1996) note that the likelihood of earnings manipulation is systematically related to poor governance structures and weaknesses in management oversight. Thus, high levels of ownership concentration may reduce the auditor's concerns about the opportunistic use of CSR since large owners may be better informed and have greater power and incentives to restrict managers from undertaking CSR for opportunistic reasons.

Similarly the debt market may also provide management discipline (Rubin, 1990). Since high debt levels may induce creditors to play a more active monitoring role (Diamond, 1991; Gilson, 1990),

and the required payments under debt contracts reduce the funds available for non-value-maximizing activities, high debt levels may reduce managers' ability to use CSR performance as a means to advance their personal interests. Therefore, high debt levels may also reduce the auditor's concerns about the opportunistic use of CSR.

In contrast, neither the auditor's concerns related to the direct cost or to the risk that the firm may fail to adequately address negative environmental and social issues, nor the positive implications of CSR performance for the reduction of the auditor's assessment of the risk of material misstatement are likely to be affected by the degree of ownership concentration and leverage.

Thus, taken together these arguments, we propose that as the ownership concentration and/or leverage increase, the level of CSR performance that minimizes the audit fees will also increase.

### 3. Research design

An extensive body of literature examines the level and nature of audit fees in organizations. Most existing research on audit fees is based on the seminal work by Simunic (1980), who was the first to develop a positive model on the determinants of audit fees. To test the relationship between CSR performance and audit fees, we first use the model of Simunic (1980), as follows:

$$Audit\ fees_{it} = \alpha + \beta_1 CSR-Score_{it} + \beta_2 CSR-Score^2_{it} + \beta_3 Size_{it} + \beta_4 Return-on-Assets_{it} + \beta_5 Loss-in-current-year_{it} + \beta_6 Current-Ratio_{it} + \beta_7 Receivables-and-Inventory-to-Total-Assets_{it} + \beta_8 H-index_{it} + \beta_9 Auditor-Tenure_{it} + \beta_{10} Auditor-Specialization_{it} + Country\ Dummies + Industry\ Dummies + Year\ Dummies + \epsilon_{it} \quad (1)$$

Consistent with the audit literature, we define<sup>14</sup> our dependent variable (*Audit fees*) as the natural logarithm of the total fees charged by the auditor for the financial statements audit work. The independent variables of interest are *CSR-Score* and its quadratic term (*CSR-Score*<sup>2</sup>). We are mainly interested in the coefficient of these two variables ( $\beta_1$  and  $\beta_2$ ). If, as proposed, there is an optimal level of CSR performance associated with minimal audit fees,  $\beta_1$  should be negative while  $\beta_2$  should be positive. Similarly to Ioannou and Serafeim (2012), Lys et al. (2015) and Luo et al. (2015), our measure

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<sup>14</sup> Complete definitions of all variables are presented in Appendix A.

of CSR performance combines the social and environmental scores obtained from the Thomson Reuters ASSET4 database.

The control variables related to client characteristics are defined as follows. *Size* is the natural logarithm of total assets. Size is one of the most important determinants of audit fees, as it generally accounts for a large proportion of the variation in audit fees (Hay et al., 2006). Larger firms tend to have more accounts and more complex transactions, and thus larger audit fees. *Return-on-assets* is the ratio of net income to total assets. Higher return-on-assets ratios are expected to reflect lower financial risk and therefore a negative association with audit fees is expected. *Loss-in-current-year* is an indicator variable equal to one when the current year's net income is negative, and zero otherwise. Reporting a loss in the current year indicates higher financial risk and is expected to be positively related to audit fees. *Current-ratio* is the ratio of current assets to current liabilities. This liquidity measure is expected to show a negative relationship with audit fees. *Receivables-and-inventory-to-total-assets* is the sum of account receivables and inventory to total assets. We expect a positive relation between this variable and audit fees since receivables and inventories have been identified as two of the most difficult areas to audit. *H-index* is the sum, per industry-year, of the squared ratio of firm sales to total industry sales. Higher values of this market concentration index are associated with lower firm failure risk. Therefore, we expect to find a negative relationship between this variable and audit fees. The control variables related to auditor characteristic are *auditor-tenure* and *auditor-specialization*. *Auditor-tenure* is defined as the number of years of the audit engagement.<sup>15</sup> Following the mixed evidence in previous studies (Hay et al., 2006), we have no clear prediction on the direction of this variable. *Auditor-specialization* is the auditor's market share of the client's industry, defined as the sum of the total assets of all clients in an industry divided by the total assets of all firms in that industry during the year. We expect a positive sign for the coefficient of auditor specialization, as specialized personnel may be more costly (Bell et al., 2001). In addition, due to the characteristics of our international sample, we add country, industry and year dummies.

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<sup>15</sup> We use the time span 1998-2012 (starting five years previous to our overall sample) to calculate auditor tenure. Thus, the maximum value of this variable is higher than the number of analyzed years.



Since Simunic's seminal study on the pricing of audit services, the audit pricing literature has further developed (e.g., Gregory and Collier, 1996; Ghosh and Lustgarten, 2006; Hogan and Wilkins, 2008), enhancing the list of relevant control variables. To reduce omitted correlated variables concerns, we use Hay et al. (2006) and Hogan and Wilkins (2008) to specify the following enhanced audit fee pricing model:

$$Audit\ fees_{it} = \beta_1 CSR-Score_{it} + \beta_2 CSR-Score^2_{it} + \beta_3 Size_{it} + \beta_4 Return-on-Assets_{it} + \beta_5 Loss-in-current-year_{it} + \beta_6 Current-Ratio_{it} + \beta_7 Receivables-and-Inventory-to-Total-Assets_{it} + \beta_8 H-index_{it} + \beta_9 Auditor-Tenure_{it} + \beta_{10} Auditor-Specialization_{it} + \beta_{11} Leverage + \beta_{12} Current-Assets-to-Total-Assets + \beta_{13} Sales-Growth + \beta_{14} Market-To-Book-Value + \beta_{15} Extraordinary-Items + \beta_{16} Busy-Season + \beta_{17} Auditor-Change + \beta_{18} IFRS + \beta_{19} US-GAAP + Country\ dummies + Industry\ dummies + Year\ dummies + \varepsilon_{it} \quad (2)$$

With respect to equation (1), in equation (2) we add additional client firm and auditor characteristics. Variables measuring client characteristics are as follows. *Leverage* is the ratio of the sum of the long-term and short-term debt to total assets. We expect a positive sign of leverage on audit fees since leverage is linked to the risk of a client failing, which potentially increases the risk of material misstatement at the financial statement level (Hay et al., 2006). *Current-Assets-to-Total-Assets* is the ratio of current assets to total assets. *Sales-growth* is the percentage growth in sales. We expect positive signs for both of these variables' coefficients ( $\beta_{12}$  and  $\beta_{13}$ ) since firms with large amounts of current assets and high growth ratios may require additional audit attention. We also add the *Market-to-Book-value*, which is the ratio of the sum of the market value of common equity, the book values of preferred stock, and the book value of total debt to the book value of total assets. *Extraordinary-Items* is an indicator variable equal to one when a firm reports discontinued operations and extraordinary items and zero otherwise. A positive relationship is expected for the last two variables and audit fees as they capture elements of firm complexity. The variables measuring auditor characteristics are as follows: *Busy-Season* is an indicator variable equal to one when client's fiscal year-end is December or January and zero otherwise (with the exception of Japan, where it is March and April). Auditors are known to have a busy season close to the end of the fiscal year, which could lead to higher staff costs. Also, they could offer discounts for audit service outside the busy season. *Auditor-Change* is an indicator variable equal to one when the client engages a new auditor in a given year and zero otherwise. Changing auditors is usually related to lower audit fees (Butterworth and Houghton, 1995; Hay et al., 2006), which

may be the result of discounts being offered to attract new business. Finally, we introduce two dummies that take the value of one for IFRS and US GAAP reporting standards, respectively. DeFond and Zhang (2014) review the recent literature and find that the increased procedure required by IFRS could lead to higher audit fees, compared to local GAAP. Similarly, the adoption of US GAAP by non-US firms is likely to increase the audit fees, because of the complexity related to being listed in the US.

#### **4. Data and sample description**

For our empirical investigation, we start from all the firms for which there is detailed audit fee data and CSR performance information available in the Thomson Reuters ASSET4 database over the period 2003-2012. The CSR information provided by this database includes, for each company, performance scores for four pillars: environmental, social, economic and governance, as well as an overall performance score. All these scores range between zero and one. These scores are based on over 250 objective key performance indicators (KPIs) and over 750 individual data points. Our measure of CSR performance is the *CSR-Score* variable (hereafter CSR-Score) which we obtained from combining the social and environmental performance scores from ASSET4, assigning equal weights to both scores.<sup>16</sup> Environmental performance refers to the firm's resources reduction, emission reduction, and product innovation benefiting the environment. Social performance captures how well the firm handles issues related to product responsibility, community, human rights, diversity, training and development, health and safety, and employment quality (see Appendix B for a description of how ASSET4 builds its performance scores and of the different categories within the social and environmental pillars).

Similar to Hoepner et al. (2016), we verify that our results are not driven by the construction of our measure of CSR performance re-estimating our model using the D-SOCIAL-KLD measure of CSR performance developed by Carroll et al. (2016). This measure is restricted to US listed firms and builds on, and improves, the Kinder, Lydenberg, Domini and Co. (KLD)<sup>17</sup> measure of CSR performance by

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<sup>16</sup> Our CSR performance measure does not reflect economic performance or corporate governance performance, because those are less connected with the notion of social investments (Lys et al., 2015).

<sup>17</sup> KLD compiles annual ratings of over 3,000 publicly traded U.S. firms, and it rates companies on a wide range of activities that reflect how well companies perform in social responsibility and build relationships with various

weighting “hard” CSR activities more than “easy” CSR activities (Carroll et al., 2016). Carroll et al. (2016) claim, and show, that their approach produces a measure of CSR performance that offers a more reliable comparison of firms than the standard KLD measure since adding up observable traits to calculate the KLD score is likely to produce measurement errors. Their approach is similar to the approach used by ASSET4 which defines relative levels of importance for each KPI.

We merge our initial dataset with firm-level stock market data from Datastream and accounting information from Worldscope. Detailed controls at the auditor level are obtained from Thomson ONE. We restrict our sample to firms that have a Big-4 auditor for consistency (only about ten percent of the initial observations had a non-Big-4 auditor). Finally, we winsorize our main variables at the one percent top and bottom level to avoid outlier-related problems. Our final sample comprises 12,330 firm-year observations from 28 countries over the period 2003-2012.

[Table 1 about here]

Table 1 presents the summary statistics of the main variables used in the audit fees regressions. The mean (median) audit fees are \$4.3 (\$3.47) million, while the mean CSR-Score is 0.57 and ranges from 0.06 to 0.98. We observe very similar statistics for the Social-Score and the Environmental-Score. In addition, the average D-SOCIAL-KLD score is 3.4 and ranges between -4.8 and 11.9. In terms of the contingency factors, environmental dynamism has a mean of 0.009, while the mean stake held by all blockholders amounts to 25 percent and the mean value of leverage is 55 percent.

Regarding the control variables, the mean total assets are \$2,692 billion, while the median value is \$675 billion. The average return on assets is 5.60 percent, while just above 10 percent of firms report a negative net income in our sample. The ratio of receivables and inventory over total assets is 0.27, while current assets are on average 1.75 times larger than the current liabilities. In terms of market concentration, the H-index is on average 0.19. The mean auditor tenure in our sample is around 8.7 years and the auditor specialization is on average 0.25. With respect to the additional control variables we add to the Simunic model, it is worthwhile highlighting that the mean ratio of current assets to total

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stakeholders. KLD captures over 94 measurement items along seven social dimensions: product safety, diversity, employee relations, community relations, corporate governance, environmental stewardship, and human rights.

assets is 44 percent. In addition, sales growth is 8.7 percent on average and the market-to-book ratio is on average 2.92. In terms of the additional auditor characteristics, auditor change is relatively infrequent as less than 4 percent of firms change auditor in any given year. Finally, about 73 percent of firms in our sample have their fiscal year end during the auditors' busy season.

[Table 2 about here]

Table 2 presents the (pairwise) correlation matrix between the main variables of interest. The correlation between the CSR-Score and audit fees is positive with a level of 0.25, which is indicative of a significant overall positive relationship in the absence of relevant controls. The D-SOCIAL-KLD is also highly correlated with audit fees, the CSR-Score and the Social and Environmental scores. In addition, as established in the auditing literature, we observe a strong positive correlation between size and audit fees. Furthermore, audit fees show relatively high correlations with return-on-assets, current-ratio and the proportion of receivables and inventory to total assets, which highlights the importance of properly controlling for size and other firm characteristics.

## **5. Empirical results**

### ***5.1. CSR performance and audit fees***

In Table 3, models (1) and (2) estimate the Simunic model with country, industry and year dummies (equation 1). In model (1) we include the CSR-Score, while in model 2 we also include its quadratic term ( $CSR\text{-Score}^2$ ). In model (1), the coefficient of CSR-Score is positive ( $\beta=0.232$ ) and significant at the one percent level. This result suggests that after controlling for other factors, a 0.1 increase in CSR-Score is associated with an increase in the audit fees of 2.32 percent. Using the mean value of audit fees, which is \$4.3 million, a 2.32 percent premium translates into an increase of audit fees of around \$0.10 million for an average firm. However, when we add the quadratic term of CSR-Score in model (2), we can observe how the relationship between CSR performance and audit fees is first negative (for CSR-scores below 0.36) and then becomes positive as the CSR-Score becomes larger than 0.36. The coefficients of CSR-Score and CSR-Score squared are significant at the 1% level. This result is consistent with our arguments on the existence of an optimal level of CSR performance that

minimizes the auditor's assessment of the risk of material misstatement, such that an increase of a firm's CSR performance beyond (below) the optimal level increases (decreases) the auditor's assessment of the risk of material misstatement and as a result the audit fees.

[Table 3 about here]

About one third of the firms in our sample have a CSR-Score below 0.36 (level of CSR performance associated with minimal audit fees). Our findings are also economically relevant. For instance, an increase in the CSR-Score from 0 to 0.36 for an average firm is associated with an audit fees reduction of 9.35 percent. In contrast, an increase from 0.36 to 0.72 is associated with an increase in the audit fees by 9.11 percent. The Simunic model explains almost 84 percent of the total variation in the audit fees, and the results on the control variables largely resemble those reported in prior studies. In model (2), firm size is positive and highly significant, which indicates that larger clients pay higher audit fees. In addition, clients pay more when they have more inventory and account receivables, report losses, or have an auditor who is an industry specialist. In contrast, clients pay lower fees when they have a higher current ratio.

To reduce concerns related to omitted variables, we also estimate an enhanced audit fee model (following Ghosh and Lustgarten (2006) and Hogan and Wilkins (2008)). Coefficient estimates for this enhanced model are presented in models (3) and (4) of table 3. When the CSR-Score is introduced without its squared term (model (3)), we continue to find a positive coefficient ( $\beta=0.225$ ), which is significant at the one percent level. In model (4), we add the quadratic term of CSR-Score and we find significant negative and positive coefficients for the variables CSR-Score and CSR-Score squared, respectively. Both coefficients are significant at the one percent level. This result confirms a U-shaped relationship between CSR performance and audit fees. In particular, for the estimated coefficients in model (4) of the CSR-Score ( $\beta=-0.455$ ) and CSR-Score squared ( $\beta=0.648$ ), audit fees are at a minimum when the CSR-Score is equal to 0.35. Any marginal increase in the CSR-Score below (beyond) this level is associated with reductions (increases) in the audit fees. The overall quadratic relationship between the CSR-Score and audit fees is illustrated in Figure 2. Regarding the control variables, we find that audit fees increase when the auditor is an industry specialist, when the audit takes place during

the auditor's busy season or when the client has more total assets, more current assets (relative to total assets) and extraordinary items and reports under US GAAP. In contrast, audit fees are lower when there was an auditor change or when the firm's current ratio is high.

[Figure 2 about here]

## **5.2. Contingencies**

We propose that environmental dynamism, ownership concentration and leverage are likely to influence the relationship between CSR performance and audit fees. In particular, we argue that the positive implications of CSR performance for the reduction of the auditor's assessment of the risk of material misstatement are likely to increase with the degree of environmental dynamism, while the negative implications of CSR performance for the reduction of the auditor's assessment of the risk of material misstatement are likely to reduce with the degree of ownership concentration and leverage. We therefore expect the level of CSR performance associated with minimal audit fees, to be larger in dynamic environments, and for firms with high degrees of ownership concentration and debt. To test these conjectures, in Table 4, we employ the enhanced audit fees model and interact the variables CSR-score and CSR-Score squared with environmental dynamism in model (1), ownership concentration in model (2) and leverage in model (3). In line with our expectations, we find in model (1) that the quadratic relationship between CSR-Score and audit fees is contingent on environmental dynamism. The coefficient on the linear interaction is significant with a negative sign, while the coefficient on the quadratic-by-linear interaction is significant with a positive sign. From the estimates, we observe that the CSR-Score associated with minimal audit fees for the mean value of environmental dynamism (0.0091) is 0.366. In comparison, the CSR-Score associated with minimal audit fees for the mean value of environmental dynamism plus one standard deviation (0.0094) is 0.426, which is substantially higher. To further illustrate how environmental dynamism moderates the CSR performance–audit fees relationship, we show in Figure 3 how the level of CSR-Score associated with minimum audit fees moves upwards, as environmental dynamism becomes larger. These results provide support to the idea that the positive implications of CSR performance for the reduction of the auditor's assessment of the risk of material misstatement are further enhanced in dynamic environments.

[Table 4 and Figure 3 about here]

Next, Models (2) and (3) in table 4 examine whether ownership concentration and leverage, respectively, moderate the CSR performance–audit fees relationship. Consistent with our arguments we find that the quadratic relationship between CSR-Score and audit fees is contingent on ownership concentration and leverage. In both models, the coefficient on the linear interaction is significant with a negative sign, while the coefficient on the quadratic-by-linear interaction is significant with a positive sign. From the estimates, we obtain that the CSR-Score associated with minimal audit fees for the mean value of ownership concentration (0.255) is 0.299, while it moves to 0.386 for the mean value of ownership concentration plus one standard deviation (0.4724). Similarly, the estimates indicate that the optimal level moves from 0.354 for the mean value of leverage (0.554) to 0.393 for the mean value of leverage plus one standard deviation (0.740). Figures 4 and 5 illustrate these moderating effects, showing how the CSR-Score associated with minimal audit fees moves upwards as ownership concentration and leverage become larger. This is in line with the idea that the presence of blockholders and debtholder reduces the negative implications of CSR performance for the reduction of the auditor’s assessment of the risk of material misstatement.

[Figure 4 and 5 about here]

## **6. Sensitivity analysis**

### **6.1 Sample splits for size and US/non-US**

As in prior studies, we control for firm size using the natural logarithm of total assets. However, given the correlation between CSR-Score and size (which in our sample is 0.30), controlling for size may not be sufficient. To make certain that our results are not driven by size, we estimate the enhanced audit fees model for separate subsets of firms based on size (similar to Ghosh and Tang, 2015). We divide firms into two subsamples, depending on whether their total sales are below or above the industry-year average.<sup>18</sup> The results from models (1) and (2) in Table 5 indicate that the coefficient of CSR-Score is negative and significant at the one percent level while the quadratic term is positive and

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<sup>18</sup> Our results are similar when using alternative size divisions, such as total assets.

significant at the one percent level for both size subgroups. In particular, for the smaller size group of firms (model (1)) the coefficients estimates of CSR-Score ( $\beta=-0.397$ ) and of CSR-Score squared ( $\beta=0.586$ ) suggest that the audit fees are at a minimum when the CSR-Score is equal to 0.34. Similarly, the audit fees of firms in the larger size group are at a minimum when the CSR-Score is equal to 0.35. Considering the similar findings for both groups of firms, these additional analyses indicate that the U-shape relationship between CSR performance and audit fees is robust to differences in firm size.

[Table 5 about here]

To verify that our results are not be driven by the relatively large proportion of US firms in our sample,<sup>19</sup> we split our sample between US and non-US firms and present the results of our enhanced audit fee model for both subsamples in models (3) and (4) in Table 5. Given the international nature of the audit profession and the similarities in the audit regulation across countries, we expect our results not to be specific to the US setting. We find that the relationship between CSR-Score and audit fees is quadratic for both US and non-US firms, adding external validity to our results. Interestingly, the audit fees of firms in the US sample are at a minimum when the CSR-Score is equal to 0.27, while it is close to 0.38 for the non-US sample. This difference may relate to a stronger shareholder-oriented (versus stakeholder-oriented) institutional setting in the US, and suggest, as proposed by Aguilera and Jackson (2010) and Hoepner et al. (2016), that country characteristics or country sustainability may play a moderating role on the effect of CSR performance.

## **6.2 Alternative specifications of CSR performance**

We conduct two additional analyses to examine the robustness of our results with respect to our measure of CSR performance. First, we examine the separate dimensions of CSR performance, namely the social and environmental performance, and show that our results are consistent to using the social and environmental scores. Second, we test our results when using D-SOCIAL-KLD. This CSR

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<sup>19</sup> About 37 percent of the firms in our sample have their headquarters in the US.



performance measure is only available for US listed companies, therefore we test the robustness of our results to the use of this measure in our subsample of US firms.

Our main measure of CSR performances combines the social and environmental performance scores, similar to Ioannou and Serafeim (2012) and Lys et al. (2015). Since our theoretical arguments apply to both the social and environmental dimensions, we expect our results to hold when considering these dimensions separately, i.e., we expect that our results are not driven by a single dimension. Models (1) and (2) in Table 6 present our results for the enhanced audit fee model when the environmental-Score and the social-Score are considered, respectively. The results across both dimensions are very similar. In line with our previous findings, there is a level of environmental and social performance associated with minimal audit fees. In particular, according to our results the audit fees are at a minimum for a level of environmental (social) performance equal to 0.35 (0.31). The finding that the environmental performance score associated with minimal audit fees is higher than the social performance score is in line with the idea developed in Hoepner et al. (2016) of a stronger effect of the corporate environmental performance dimension on the reduction of firms' default risk, compared to the social performance dimension.

Model (3) in table 6 shows the results for the enhanced audit fee model when using the D-SOCIAL-KLD measure of CSR performance. Similar to our previous findings, the coefficient of the D-SOCIAL-KLD is negative and significant, while the coefficient of the squared term is positive and significant, revealing a quadratic relationship between D-SOCIAL-KLD and audit fees. According to our results, the audit fees are at a minimum for a level of D-SOCIAL-KLD equal to 1.1. Indicatively, we note that about 26 percent of the sample has a D-SOCIAL-KLD score below 1.1. This result is similar to the results obtained for the CSR-Score when focusing on the US sample only (where 25 percent of the sample was found below the optimal level). Overall, the results for the D-SOCIAL-KLD measure of CSR performance provide additional validity to the results obtained when using our CSR-Score. Both measures are highly correlated, and both measures show a quadratic relationship with audit fees with a similar proportion of firms above and below the optimal level.

[Table 6 about here]

### 6.3 CSR performance and pre-audit misstatement risk

To provide additional support to our theoretical argument that there is a level of CSR performance that minimizes the auditor's assessment of the risk of material misstatement and thus the audit fees, we estimate a proxy of the pre-audit misstatement risk and analyse its relationship with CSR performance. As in Lobo and Zhao (2013), we rely on the misstatement detection model of Dechow et al. (2011) to estimate the pre-audit misstatement risk based on current year financial information and use the predicted probability of misstatements from that model as a proxy for the pre-audit misstatement risk.<sup>20</sup> Specifically, we model the pre-audit misstatement risk by using the following logistic specification:

$$Rest_{it} = \alpha + \beta_1 CSR-Score_{it} + \beta_2 CSR-Score^2_{it} + \beta_3 Total-Accrual_{it} + \beta_4 Drec_{it} + \beta_5 Dinv_{it} + \beta_6 Soft-assets_{it} + \beta_7 Dcsale_{it} + \beta_8 Droa_{it} + \beta_9 Issuance_{it} + \beta_{10} Abret_{it} + \beta_{11} Abret_{it-1} + \varepsilon_{it} \quad (3)$$

The dependent variable *Rest* equals 1 if the annual report for the current year is subsequently restated, and 0 otherwise. *CSR-Score* and its quadratic term ( $CSR-Score^2$ ) are our independent variables of interest. *Total-accruals* is measured as the change in noncash assets (noncash total assets minus total liabilities and preferred stocks) from year t-1 to year t scaled by average total assets. *Drec* is the change in accounts receivables over total assets. *Dinv* is the change in inventory over total assets. *Soft-assets* are the proportion of soft assets (Total assets - Property, Plants and equipment - Cash and Short-Term Investments) to total assets. *Dcsale* is the percentage change in cash sales (cash sales = sales – the change in inventory). *Droa* is the change in return on assets. *Issuance* is a dummy variable taking the value of 1 if the firm issued debt or equity securities during year t, and zero otherwise. *Abret* is the annual buy-and-hold stock return minus annual buy-and-hold value weighted NYSE-AMEX-NASD index return.

[Table 7 about here]

Table 7, Panel A presents the descriptive statistics of the variables used in the analysis of the misstatement detection model (equation 3), while panel B shows the estimation results. The coefficients

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<sup>20</sup>We rely on Audit Analytics to obtain the restatement data, which is restricted to US listed firms. Thus, we are able to estimate the pre-audit misstatement risk and to analyse its relationship with CSR performance only for our subsample of US firms.

of our control variables show the same signs as Dechow et al. (2011) and Lobo and Zhao (2013) and the explanatory power of the model is also similar to the ones reported in these studies. Importantly, the coefficients on CSR-Score and CSR-Score squared are significant at the one percent level with a positive and negative signs, respectively. This result suggests a quadratic relationship between CSR performance and the pre-audit misstatement risk. Initially, the estimated pre-audit misstatement risk goes down as CSR-Score becomes larger, until the CSR-Score =0.38. Past this point, larger levels of the CSR-Score are associated with increases in the estimated pre-audit misstatement risk. Thus, our results suggest that there is a level of CSR performance associated with minimal pre-audit misstatement risk. Since auditors assess this pre-audit misstatement risk when analysing the risk of material misstatement this result provides further empirical support to our theoretical argument on the existence of a level of CSR performance that minimize the auditor's assessment of the risk of material misstatement and hence the audit fees.

## **7. Conclusions**

The purpose of this paper is to investigate whether and how firms' CSR Performance influences the auditors' assessment of the risk of material misstatement, by analysing their audit pricing decision. Using an international sample of listed firms over the 2003-2012 period, we provide robust evidence of the existence of an optimal level of CSR performance associated with minimal audit fees. This result provides support to the idea that there is an optimal level of CSR performance that minimizes the auditors' assessment of the risk of material misstatement which in turn lowers the need for greater auditor effort; that is why auditors charge firms significantly less when their CSR performance is at the optimal level. We also show that the optimal level of CSR performance becomes larger in dynamic environments and for firms with higher degrees of ownership concentration and leverage. These results are in line with the idea that environmental dynamism (ownership concentration and leverage) further enhances (reduces) the positive (negative) implications of CSR performance for the reduction of the auditor's assessment of the risk of material misstatement. Prior auditing research has noted that risk assessment models may be refined and that examining the impact of various factors on audit judgements may assist the development of audit support system and decision aids (Asare and Davidson, 1995;

Dechow et al, 1996; Bell and Carcello, 2000). The findings from this study extend our knowledge of auditors' judgement processes and may be useful to refine the traditional models of audit fees as well as client acceptance and retention guidelines. In addition, our findings suggest that audit effort is one mechanism through which CSR performance may influence the (post-audit) financial reporting quality of firms and, as a result, that audit fees may be an important omitted variable of prior studies that examine the effect of CSR performance on (post-audit) financial reporting quality.

Our results may also foster future research. In particular, future research could further enhance our understanding of the audit process by examining the impact of CSR performance on the auditor's engagement strategies such as assigning more high-risk specialists or industry experts, applying more intensive testing, and/or performing additional review. It would also be interesting to examine the likelihood of fraudulent financial reporting for an audit client, conditional on the level of CSR performance and to analyse the relationship between CSR performance and (post-audit) financial reporting quality controlling for the effect that CSR performance has on the audit effort.

In addition, future research could also apply our theoretical framework of the existence of positives and negatives implications of CSR performance for the auditor's assessment of the risk of material misstatements to explore the existence of a non-linear relationship between CSR performance and firm value or access to finance. Finding a non-linear relationship may help to reconcile the mixed results obtained in these two lines of literature (e.g., Renneboog et al., 2008; El Ghouli et al., 2011; Goss and Roberts, 2011; Cheng et al., 2014; Gregory et al., 2016; Hoepner et al., 2016). In this sense, future work could extend the study of Gregory et al. (2016) who show that firms with high CSR Performance have a higher value which they attribute to greater earnings persistence, and of Hoepner et al. (2016), who find that country sustainability reduces the cost of bank loans but that the effect of firm-level sustainability is not significant, by allowing for non-linearity on the effect of CSR performance. Finally, future research could explore other contingency factors, at country, industry or firm level that may influence the relationship between CSR performance and the auditors' assessment of the risk of material misstatement. As in Hoepner et al. (2016), it would be interesting to examine whether country characteristics or country sustainability moderate this relationship.

## Appendix A: Variable definitions

Variable name	Definition
<b>Dependent variable</b>	
Audit fees	Natural log of the fees (in US\$) charged by the auditor for the financial statements audit work.
<b>CSR measures</b>	
CSR-Score	The average of the ASSET4 benchmarked Social and Environmental Performance scores. It takes values between zero and one.
Social-Score	ASSET4 benchmarked Social Performance score that takes values between zero and one. This measure reflects a company's capacity to generate trust and loyalty with its workforce, customers and society, through its use of best management practices.
Environmental-Score	ASSET4 benchmarked Environmental Performance score that takes values between zero and one. This measure captures a company's impact on living and non-living natural systems, including the air, land and water, as well as completes ecosystems.
D-SOCIAL-KLD	A measure of CSR performance developed by Carroll et al. (2016). This measure builds on and improves the Kinder, Lydenberg, Domini and Co. (KLD) measure by weighting "hard" CSR activities more than "easy" CSR activities. This measure is only available for a subsample of US listed firms.
<b>Contingency factors</b>	
Environmental Dynamism	A standardized index of industry dynamism that is obtained by regressing industry sales over the five years preceding the giving year (including the giving year) against time, and using the standard error of the regression coefficient related to a time dummy variable divided by the average value of the industry's sales.
Ownership Concentration	The total ownership stake held by blockholders (i.e. shareholders with at least five percent of shares), obtained from Thomson One.
Leverage	The ratio of the sum of the long-term and short-term debt to total assets.
<b>Auditing characteristics</b>	
Auditor-change	A dummy that takes the value of one when the client firm hires a new auditor and zero otherwise.
Auditor-tenure	The number of years of the audit engagement.
Auditor-specialization	Auditor's market share of the client's industry, defined as the sum of the total assets of all clients in an industry divided by the total assets of all firms in that industry during the year.
Busy-season	A dummy that takes the value of one when client's fiscal year-end is December or January and zero otherwise (with the exception of Japan, where it is March and April).
<b>Firm controls</b>	
Size	Natural log of the total assets of the firm (measured in thousands US\$).
Return-on-Assets	Return on assets defined as net income divided by total assets.
Receivables-and Inventory-to- Total-assets	The ratio of the sum of receivables and inventories divided by total assets.
Loss-in-current year	A dummy that takes the value of one if the firm reports a loss during the current year and zero otherwise.
Current-ratio	The ratio of current assets to current liabilities.
Current-assets-to-Total-assets	The ratio of current assets to total assets.
Sales-growth	The percentage of sales growth defined as $(sales_t - sales_{t-1}) / sales_{t-1}$ .
Extraordinary-items	A dummy that takes the value of one if the firm reports discontinued operations and extraordinary items during the current year and zero otherwise.
Market-to-book-value	The ratio of the sum of the market value of common equity, the book values of preferred stock, and the book value of total debt to the book value of total assets.
H-index	Herfindahl index of industry sales concentration. It is the sum, per industry year, of the squared ratio of firm sales to total industry sales.
IFRS	A dummy that takes the value of one if the firm follows IFRS and zero otherwise.
US-GAAP	A dummy that takes the value of one if the firm follows US GAAP and zero otherwise.

## **Appendix B: Description of the CSR performance scores from the Thomson Reuters Asset 4 Database.**

Thomson Reuters ASSET4 covers more than 4.300 firms by assessing all firms listed on ASX 300, Bovespa, CAC 40, DAX, FTSE 250, MSCI Emerging Markets, MSCI World, NASDAQ 100, S&P 500, SMI and STOXX 600. Firms are assessed based on objective and publicly available data, which include stock exchange filings, CSR and annual reports, nongovernmental organizations' websites, and news sites. According to ASSET4, every data point goes through a multi-step verification and process control, which includes a series of data entry checks, automated quality rules and historical comparisons to ensure a high level of accuracy, timeliness and quality.

To build the performance scores for the different pillars, KPIs are obtained from over 750 individual data points, which are categorized as “drivers” or “outcomes. While drivers track policies that cover issues such as emission reduction or human rights, outcomes track quantitative results such as greenhouse gas emissions or personnel turnover. ASSET4 classifies the KPIs into categories within each pillar. For example, the environmental pillar consists of three category groupings: emission reduction, product innovation, and resource reduction. Each KPI is scored against the company peers between zero and one. To determine the relative weight of each KPI within each category, each KPI is assigned a Relative Level of Importance (RLI) from 0 to 5 based on several factors, such as the relevance of the KPI in the industry, whether it is derived from independent information content or the objective measurability of the KPI. The obtained weighted average scores for each category are then normalized and adjusted for skewness and the differential between the mean and the median, then fitted to a bell curve to derive ratings for each category between 0 and 1 for each company. The resulting category ratings are comparable across categories. Finally, the performance score of each pillar is the average of the different category ratings that make up the pillar, assuming equal weights for each category within the pillar.

In what follows we provide a detailed description of the different categories within the social and environmental pillars, as outlined in the ASSET 4 documentation.

<b>Environmental Performance Pillar</b>	
Resource Reduction	The resource reduction category measures a company's management commitment and effectiveness towards achieving an efficient use of natural resources in the production process. It reflects a company's capacity to reduce the use of materials, energy or water, and to find more eco-efficient solutions by improving supply chain management.
Emission Reduction	The emission reduction category measures a company's management commitment and effectiveness towards reducing environmental emission in the production and operational processes. It reflects a company's capacity to reduce air emissions (greenhouse gases, F-gases, ozone-depleting substances, NOx and SOx, etc.), waste, hazardous waste, water discharges, spills or its impacts on biodiversity and to partner with environmental organizations to reduce the environmental impact of the company in the local or broader community.
Product Innovation	The product innovation category measures a company's management commitment and effectiveness towards supporting the research and development of eco-efficient products or services. It reflects a company's capacity to reduce the environmental costs and burdens for its customers, and thereby creating new market opportunities through new environmental technologies and processes or eco-designed, dematerialized products with extended durability.
<b>Social Performance Pillar</b>	
Employment Quality	The employment quality category measures a company's management commitment and effectiveness towards providing high-quality employment benefits and job conditions. It reflects a company's capacity to increase its workforce loyalty and productivity by distributing rewarding and fair employment benefits, and by focusing on long-term employment growth and stability by promoting from within, avoiding lay-offs and maintaining relations with trade unions.
Health and Safety	The health and safety category measures a company's management commitment and effectiveness towards providing a healthy and safe workplace. It reflects a company's capacity to increase its workforce loyalty and productivity by integrating into its day-to-day operations a concern for the physical and mental health, well-being and stress level of all employees.
Training and Development	The training and development category measures a company's management commitment and effectiveness towards providing training and development (education) for its workforce. It reflects a company's capacity to increase its intellectual capital, workforce loyalty and productivity by developing the workforce's skills, competences, employability and careers in an entrepreneurial environment.
Diversity and Opportunity	The diversity and opportunity category measures a company's management commitment and effectiveness towards maintaining diversity and equal opportunities in its workforce. It reflects a company's capacity to increase its workforce loyalty and productivity by promoting an effective life-work balance, a family friendly environment and equal opportunities regardless of gender, age, ethnicity, religion or sexual orientation.
Human Rights	The human rights category measures a company's management commitment and effectiveness towards respecting the fundamental human rights conventions. It reflects a company's capacity to maintain its license to operate by guaranteeing the freedom of association and excluding child, forced or compulsory labor.
Community	The community category measures a company's management commitment and effectiveness towards maintaining the company's reputation within the general community (local, national and global). It reflects a company's capacity to maintain its license to operate by being a good citizen (donations of cash, goods or staff time, etc.), protecting public health (avoidance of industrial accidents, etc.) and respecting business ethics (avoiding bribery and corruption, etc.).
Customer / Product Responsibility	The customer / product responsibility category measures a company's management commitment and effectiveness towards creating value-added products and services upholding the customer's security. It reflects a company's capacity to maintain its license to operate by producing quality goods and services integrating the customer's health and safety, and preserving its integrity and privacy also through accurate product information and labeling.

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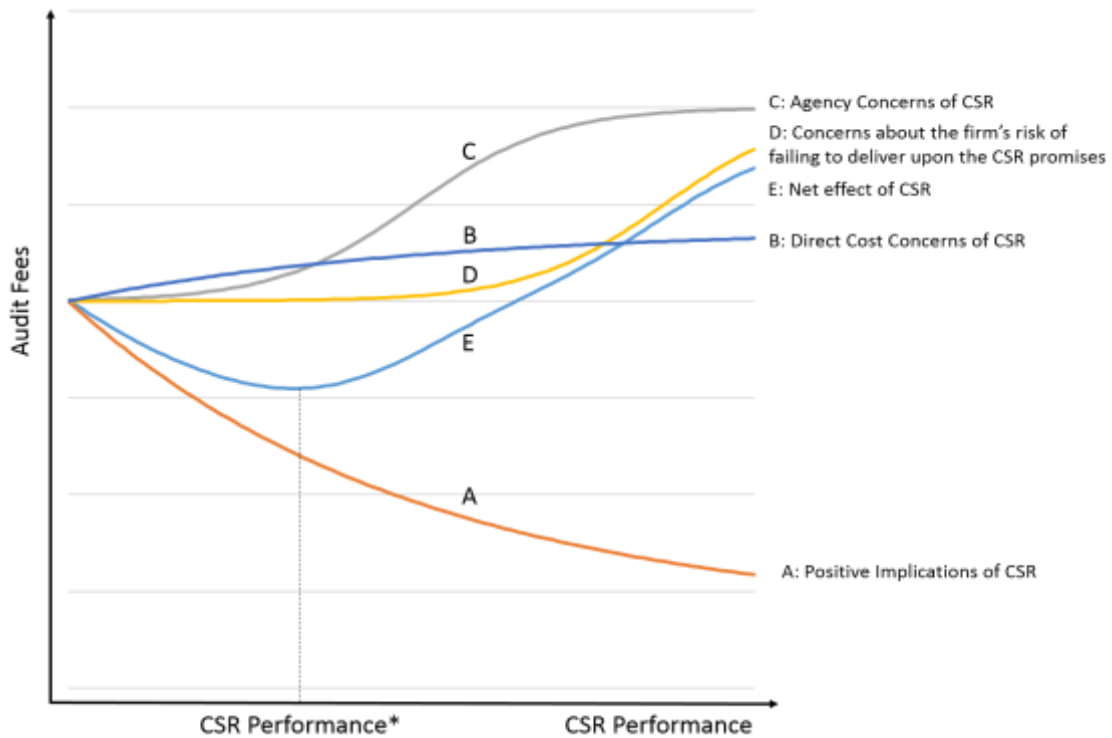
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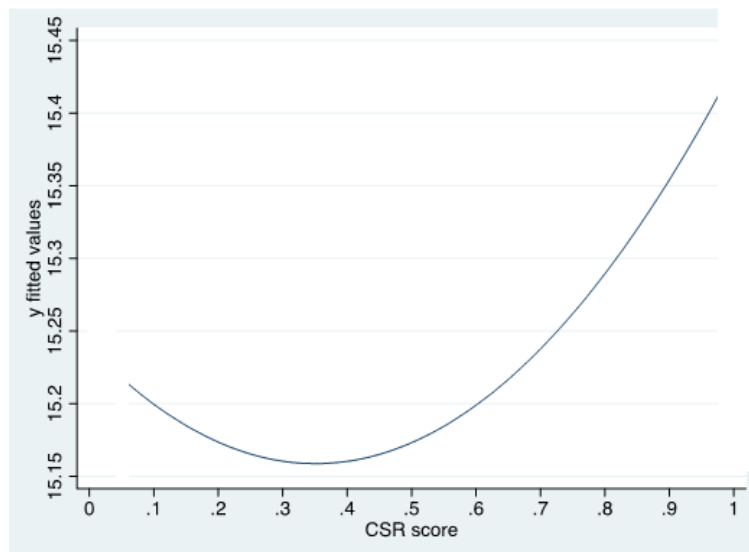
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**Figure 1. The Hypothesized U-shaped Relationship between CSR performance and Audit Fees**



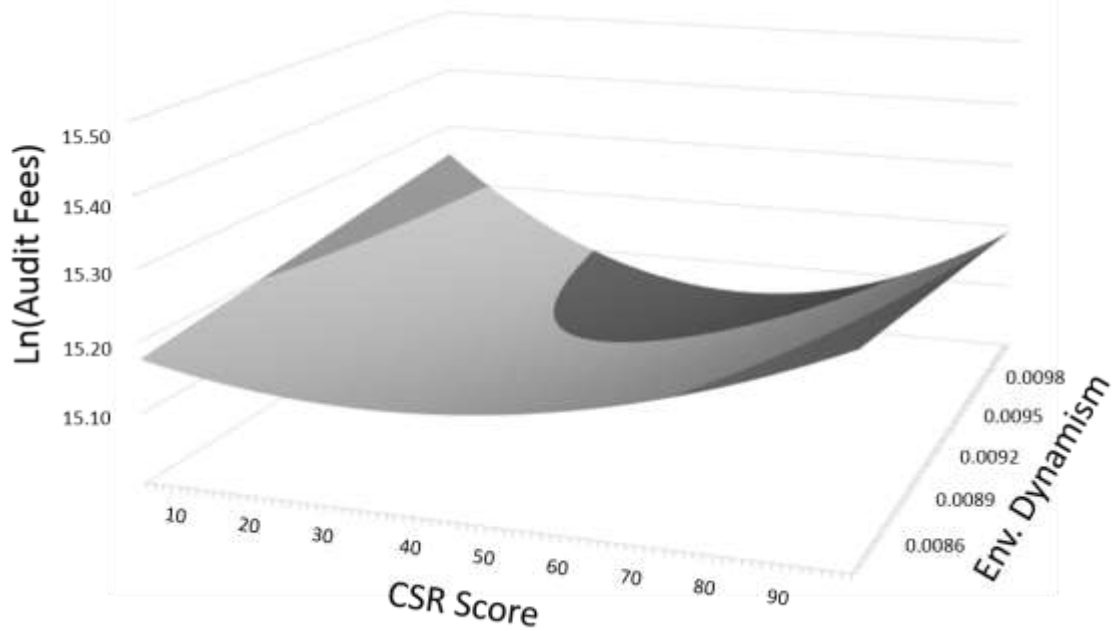
This figure plots the level of audit fees for different values of the CSR performance. Curve A shows how the positive implications of CSR performance for the reduction of the auditor's assessment of the risk of material misstatement influences the firm's audit fees for different levels of CSR performance. Curves B, C and D show how the negative implications of CSR performance for the reduction of the auditor's assessment of the risk of material misstatement, in terms of direct cost, agency concerns and concerns about the firm's risk of failing to deliver upon the CSR promises, respectively, influence the firm's audit fees for different levels of CSR performance. Curve E reflect the net effects of the firm's CSR performance on the audit fees for different levels of CSR performance.

**Figure 2. The relationship between CSR performance and Audit Fees**



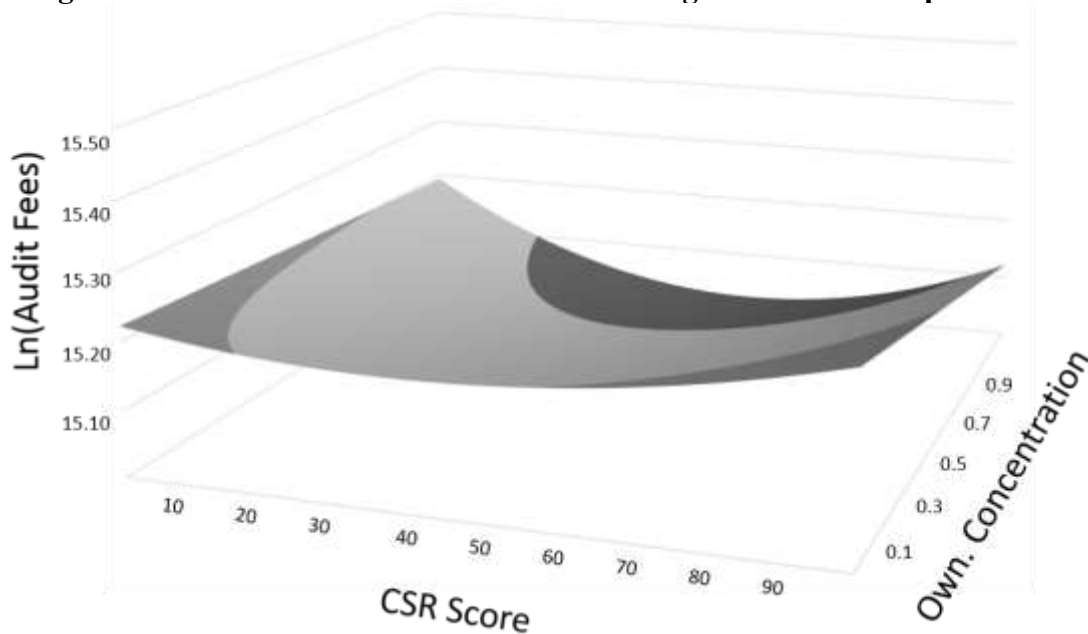
This figure plots, for different values of the CSR-Score, the results from specification (4) in Table 3, which estimates the enhanced audit fee model. Specifically, it plots the function:  $y = 15.24 - 0.455 \cdot \text{CSR-Score} + 0.648 \cdot \text{CSR-Score}^2$ . The intercept (15.24) is computed by using the estimated coefficients from specification (4) in Table 3 and the mean values of the rest of variables included (see Table 1). By taking the derivative of the function, we find the minimum at CSR-Score = 0.35.

**Figure 3: CSR Performance- Audit Fees: Contingent on Environmental Dynamism**



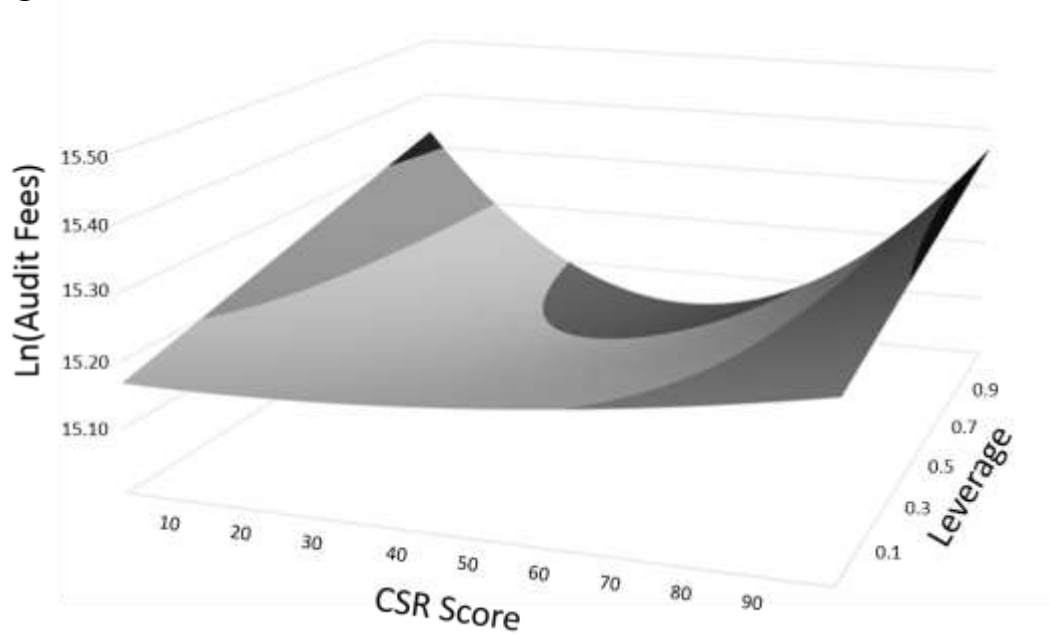
This figure plots, for different values of the CSR-Score, the results from specification (1) in Table 4. Specifically, it plots the function:  $y = 15.19 + 7.437 \cdot \text{CSR-Score} - 5.705 \cdot \text{CSR-Score}^2 + 131 \cdot \text{Environmental Dynamism} - 873 \cdot \text{CSR-Score} \cdot \text{Environmental Dynamism} + 703 \cdot \text{CSR-Score}^2 \cdot \text{Environmental Dynamism}$ . The intercept (15.19) is computed by using the estimated coefficients from specification (1) in Table 4 and the mean values of the rest of variables included (see Table 1).

**Figure 4: CSR Performance- Audit fees: Contingent on Ownership Concentration**



This figure plots, for different values of the CSR-Score, the results from specification (2) in Table 4. Specifically, it plots the function:  $y = 15.22 - 0 \cdot \text{CSR-Score} + 0.302 \cdot \text{CSR-Score}^2 + 0 \cdot \text{Ownership Concentration} - 1.447 \cdot \text{CSR-Score} \cdot \text{Ownership Concentration} + 1.235 \cdot \text{CSR-Score}^2 \cdot \text{Ownership Concentration}$ . The intercept (15.22) is computed by using the estimated coefficients from specification (2) in Table 4 and the mean values of the rest of variables included (see Table 1).

**Figure 5: CSR Performance - Audit fees: Contingent on Leverage**



This figure plots, for different values of the CSR-Score, the results from specification (3) in Table 4. Specifically, it plots the function:  $y = 15.18 + 0.664 \cdot \text{CSR-Score} - 0.594 \cdot \text{CSR-Score}^2 + 0.285 \cdot \text{Leverage} - 2.006 \cdot \text{CSR-Score} \cdot \text{Leverage} + 2.213 \cdot \text{CSR-Score}^2 \cdot \text{Leverage}$

The intercept (15.18) is computed by using the estimated coefficients from specification (2) in Table 4 and the mean values of the rest of variables included (see Table 1).



**Table 1. Descriptive statistics**

Variable	Obs.	Mean	Std. Dev.	Min	Max
Audit fees	12330	15.2386	1.8275	0.5878	19.9976
CSR-Score	12330	0.5657	0.2871	0.0597	0.9781
Social-Score	12330	0.5666	0.2965	0.0341	0.9888
Environmental-Score	12330	0.5648	0.3140	0.0831	0.9719
D-SOCIAL-KLD	4474	3.8443	2.6376	-4.8082	10.4796
Environmental Dynamism	12330	0.0091	0.0003	0.0053	0.0094
Ownership Concentration	12330	0.2548	0.2176	0.0000	0.9021
Leverage	12330	0.5540	0.1863	0.0231	1.1188
Auditor-Change	12330	0.0380	0.1911	0.0000	1.0000
Auditor-Tenure	12330	8.6753	3.8425	1.0000	15.0000
Auditor-Specialization	12330	0.2528	0.1921	0.0001	1.0000
Busy-Season	12330	0.7319	0.4430	0.0000	1.0000
Size	12330	16.0993	2.1579	8.6545	24.9621
Return-on-Assets	12330	0.0560	0.0709	-0.4960	0.3198
Receivables-and Inventory-to- Total-assets	12330	0.2673	0.1767	0.0000	0.9926
Loss-in-Current-Year	12330	0.1041	0.3054	0.0000	1.0000
Current-Ratio	12330	1.7472	1.2265	0.3000	14.2900
Current-assets-to-Total-assets	12330	0.4392	0.2357	0.0147	1.4723
Sales-Growth	12330	0.0865	0.2075	-0.5284	2.9963
Extraordinary-items	12330	0.1131	0.3168	0.0000	1.0000
Market-to-Book-Value	12330	2.9172	3.7953	-49.0715	49.2226
H-Index	12330	0.1932	0.1436	0.0500	1.0000
IFRS	12330	0.3537	0.4781	0.0000	1.0000
US-GAAP	12330	0.3998	0.4899	0.0000	1.0000

This table describes the main variables used for the analysis. All variables span the 2003-2012 period and correspond to 12,330 firm-year observations from 28 countries. Variable definitions: Audit fees is the natural log of the fees paid to auditor for the financial statement audit work (in US\$). CSR-Score is the average of the ASSET4 benchmarked Social and environmental Performance scores. It takes values between zero and one. Social-Score is the ASSET4 benchmarked Social performance score that takes values between zero and one. It reflects a company's capacity to generate trust and loyalty with its workforce, customers and society, through its use of best management practices. Environmental Score is the ASSET4 benchmarked Environmental performance score that takes values between zero and one. It captures a company's impact on living and non-living natural systems, including the air, land and water, as well as complete ecosystems. D-SOCIAL-KLD is the CSR performance measure developed by Carroll et al. (2016) that builds on and improves the Kinder, Lydenberg, Domini and Co. (KLD) measure; Environmental dynamism is a standardized index of industry dynamism obtained by regressing industry sales over the five years preceding the giving year (including the giving year) against time, and using the standard error of the regression coefficient related to a time dummy variable divided by the average value of the industry's sales. Ownership concentration is the total ownership stake held by blockholders. Leverage is the ratio of the sum of the long-term and short-term debt to total assets. Auditor-change is a dummy that takes the value of one when the client contracts a new auditor and zero otherwise. Auditor-tenure reflects the number of years of the audit engagement. Auditor-specialization is the auditor's market share of the client's industry, defined as the sum of the total assets of all clients in an industry divided by the total assets of all firms in that industry during the year. Busy-season is a dummy that takes the value of one when client's fiscal year-end is December or January and zero otherwise (with the exception of Japan, where it is March and April); Size: natural log of the total assets of the firm (in thousands US\$). Leverage is the ratio of the sum of the long-term and short-term debt to total assets. Return-on-Assets is defined as net income divided by total assets. Receivables-and-Inventory-to-Total-assets is the ratio of the sum of receivables and inventories divided by total assets. Loss-in-current-year is a dummy that takes the value of one if the firm reports a loss during the current year, and zero otherwise. Current-ratio is the ratio of current assets to current liabilities. Current-assets-to-Total-assets is the ratio of current assets to total assets; Sales-growth is the percentage of sales growth defined as:  $(sales_t - sales_{t-1}) / sales_{t-1}$ . Extraordinary-items is a dummy that takes the value of one if the firm reports discontinued operations and extraordinary items during the current year and zero otherwise. Market-to-book-value is the ratio of the sum of the market value of common equity, the book values of preferred stock, and the book value of total debt to the book value of total assets. H-index is the Herfindahl index of industry sales concentration. It is the sum at industry year of the squared ratio of firm sales to total industry sales. IFRS is a dummy that takes the value of one if the firm follows IFRS and zero otherwise. US-GAAP is a dummy that takes the value of one if the firm follows US GAAP and zero otherwise.

**Table 2. Correlations**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 Audit fees	1.00															
2 CSR-Score	0.25	1.00														
3 Social-Score	0.16	0.94	1.00													
4 Environmental-Score	0.31	0.94	0.77	1.00												
5 D-SOCIAL-KLD	0.60	0.73	0.69	0.70	1.00											
7 Environmental Dynamism	0.09	0.07	0.06	0.07	0.06	1.00										
7 Ownership Concentration	-0.19	-0.09	-0.05	-0.12	-0.16	-0.16	1.00									
8 Leverage	0.04	0.19	0.18	0.18	0.25	0.01	-0.02	1.00								
9 Size	0.87	0.30	0.20	0.35	0.69	0.09	-0.15	0.09	1.00							
10 H-Index	-0.03	-0.06	-0.05	-0.06	0.00	-0.07	0.01	-0.12	0.00	1.00						
11 Current-Ratio	-0.06	-0.18	-0.19	-0.16	-0.24	0.02	-0.02	-0.56	-0.13	0.09	1.00					
12 Receivables-and Inventory-to-Total-Assets	0.05	0.08	0.06	0.10	-0.05	-0.08	0.00	0.07	-0.07	-0.17	0.07	1.00				
13 Return-on-Assets	-0.11	-0.01	0.03	-0.04	0.03	-0.03	0.02	-0.26	-0.14	-0.01	0.11	0.12	1.00			
14 Loss-in-Current-Year	-0.02	-0.06	-0.07	-0.04	-0.07	0.00	0.01	0.08	-0.03	0.06	0.03	-0.07	-0.61	1.00		
15 Auditor-Tenure	0.02	0.04	0.03	0.05	0.09	0.18	-0.26	-0.03	-0.01	0.05	0.05	-0.03	0.03	-0.02	1.00	
16 Auditor-Specialization	0.02	0.00	0.00	0.01	0.07	-0.01	-0.03	-0.01	0.02	0.13	0.01	-0.01	-0.01	0.00	0.02	1.00

This table presents the pairwise correlations of the main variables used for the analyses. All variables are defined in Table 1 and Appendix A.

**Table 3. CSR Performance and Audit Fees**

	Simunic model		Enhanced model	
	(1)	(2)	(3)	(4)
CSR-Score	0.232*** (0.033)	-0.516*** (0.128)	0.225*** (0.032)	-0.455*** (0.125)
CSR-Score <sup>2</sup>		0.712*** (0.119)		0.648*** (0.117)
Size	0.614*** (0.008)	0.607*** (0.008)	0.612*** (0.008)	0.606*** (0.008)
H-Index	-0.301 (0.219)	-0.283 (0.219)	-0.229 (0.219)	-0.215 (0.219)
Current-Ratio	-0.035*** (0.006)	-0.037*** (0.006)	-0.068*** (0.007)	-0.069*** (0.007)
Receivables-and Inventory-to-Total-assets	0.754*** (0.053)	0.774*** (0.053)	0.091 (0.086)	0.115 (0.086)
Return-on-Assets	0.186 (0.122)	0.154 (0.122)	0.041 (0.131)	0.022 (0.131)
Loss-in-Current-Year	0.071** (0.028)	0.067** (0.028)	0.047* (0.028)	0.044 (0.028)
Auditor-Tenure	0.002 (0.002)	0.002 (0.002)	-0.001 (0.002)	-0.001 (0.002)
Auditor-Specialization	0.100*** (0.034)	0.099*** (0.033)	0.118*** (0.033)	0.118*** (0.033)
Leverage			0.03 (0.050)	0.033 (0.050)
Current-Assets-to-Total-Assets			0.762*** (0.067)	0.755*** (0.067)
Sales-Growth			-0.029 (0.039)	-0.03 (0.039)
Market-to-Book-Value			0.002 (0.002)	0.002 (0.002)
Extraordinary-Items			0.255*** (0.020)	0.255*** (0.020)
Busy-Season			0.114*** (0.017)	0.112*** (0.016)
Auditor-Change			-0.148*** (0.043)	-0.149*** (0.043)
IFRS			0.02 (0.040)	0.019 (0.040)
US-GAAP			0.255*** (0.070)	0.255*** (0.071)
Country dummies	yes	yes	yes	yes
Industry dummies	yes	yes	yes	yes
Year dummies	yes	yes	yes	yes
Constant	4.801*** (0.272)	5.052*** (0.275)	4.750*** (0.281)	4.987*** (0.284)
R-squared	0.838	0.838	0.844	0.844
Observations	12330	12330	12330	12330

\* p<0.10, \*\* p<0.05, \*\*\* p<0.01. The dependent variable for all specifications is the natural logarithm of Audit fees. Specifications (1) and (2) report the regression results bases on the Simunic (1980) audit fee model. Specifications (3) and (4) report the regression results based on our enhanced model of audit fees, based on Hay et al. (2006) and Hogan and Wilkins (2008). All variables are defined in Table 1 and Appendix A. Standard errors are reported in parentheses.

**Table 4. CSR Performance and Audit Fees – Contingency factors**

	(1)	(2)	(3)
CSR-Score	7.437** (3.056)	-0.059 (0.191)	0.664* (0.357)
CSR-Score <sup>2</sup>	-5.705** (2.883)	0.302* (0.174)	-0.594* (0.338)
Environmental Dynamism <sup>1</sup>	0.131* (0.074)		
Environmental Dynamism <sup>1</sup> * CSR-Score	-0.873*** (0.337)		
Environmental Dynamism <sup>1</sup> * CSR-Score <sup>2</sup>	0.703** (0.318)		
Ownership Concentration		0.134 (0.124)	
Ownership Concentration * CSR-Score		-1.447*** (0.553)	
Ownership Concentration * CSR-Score <sup>2</sup>		1.235** (0.506)	
Leverage	0.030 (0.050)	0.030 (0.050)	0.285** (0.140)
Leverage * CSR-Score			-2.006*** (0.631)
Leverage * CSR-Score <sup>2</sup>			2.213*** (0.588)
Size	0.605*** (0.007)	0.603*** (0.007)	0.606*** (0.007)
H-index	-0.12 (0.230)	-0.18 (0.225)	-0.208 (0.223)
Current-Ratio	-0.069*** (0.007)	-0.070*** (0.007)	-0.071*** (0.007)
Receivables-and Inventory-to- Total-Assets	0.116* (0.067)	0.111* (0.067)	0.126* (0.067)
Return-on-Assets	0.024 (0.134)	0.031 (0.135)	0.003 (0.134)
Loss-in-Current-Year	0.044 (0.028)	0.041 (0.028)	0.043 (0.028)
Auditor-Tenure	-0.001 (0.002)	-0.002 (0.002)	-0.001 (0.002)
Auditor-Specialization	0.122*** (0.035)	0.121*** (0.035)	0.119*** (0.035)
Current-Assets-to-Total-Assets	0.752*** (0.053)	0.739*** (0.053)	0.751*** (0.053)
Sales-Growth	-0.031 (0.034)	-0.029 (0.035)	-0.035 (0.034)
Market-to-Book-Value	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)
Extraordinary-Items	0.253*** (0.022)	0.252*** (0.022)	0.256*** (0.022)
Busy-Season	0.110*** (0.017)	0.109*** (0.017)	0.113*** (0.017)
Auditor-Change	-0.148*** (0.038)	-0.156*** (0.038)	-0.150*** (0.038)
IFRS	0.020 (0.032)	0.030 (0.032)	0.020 (0.032)
US-GAAP	0.255*** (0.053)	0.273*** (0.054)	0.263*** (0.053)
Country dummies	yes	yes	yes
Industry dummies	yes	yes	yes
Year dummies	yes	yes	yes
Constant	2.285** (1.011)	4.868*** (0.932)	3.736*** (0.809)
R-squared	0.844	0.845	0.844
N	12330	12330	12330

\* p<0.10, \*\* p<0.05, \*\*\* p<0.01. The dependent variable for all specifications is the natural logarithm of Audit fees. Specifications (1), (2) and (3) report the regression results based on the enhanced model of audit fees considering the environmental dynamism, ownership concentration and leverage as contingency factors, respectively. All variables are defined in Table 1 and Appendix A. Standard errors are reported in parentheses.

<sup>1</sup> The coefficients shown are multiplied by 10<sup>-3</sup>.

**Table 5. Robustness: CSR Performance and Audit Fees splitting the sample by size and US/non-US**

	Smaller than median yearly industry sales	Larger than median yearly industry sales	US sample	Non-US sample
	(1)	(2)	(3)	(4)
CSR-Score	-0.397** (0.186)	-0.455*** (0.164)	-0.375** (0.146)	-0.404** (0.185)
CSR-Score <sup>2</sup>	0.586*** (0.177)	0.655*** (0.149)	0.702*** (0.134)	0.530*** (0.171)
Size	0.607*** (0.012)	0.611*** (0.010)	0.537*** (0.009)	0.647*** (0.011)
H-index	0.018 (0.310)	-0.436 (0.388)	-0.055 (0.314)	-0.192 (0.283)
Current-Ratio	-0.053*** (0.009)	-0.087*** (0.010)	-0.075*** (0.009)	-0.064*** (0.010)
Receivables-and Inventory-to-Total-Assets	0.147 (0.124)	0.124 (0.119)	0.436*** (0.127)	-0.128 (0.120)
Return-on-Assets	0.069 (0.177)	-0.061 (0.195)	0.009 (0.157)	0.029 (0.203)
Loss-in-Current-Year	0.087** (0.041)	-0.004 (0.037)	0.100*** (0.035)	0.012 (0.039)
Auditor-Tenure	0.000 (0.004)	-0.003 (0.003)	-0.012*** (0.003)	0.006* (0.003)
Auditor-Specialization	0.079* (0.046)	0.168*** (0.048)	0.133*** (0.038)	0.064 (0.050)
Leverage	0.110 (0.075)	-0.093 (0.067)	0.220*** (0.057)	-0.092 (0.076)
Current-Assets-to-Total-Assets	0.718*** (0.093)	0.777*** (0.092)	0.591*** (0.096)	0.922*** (0.095)
Sales-Growth	-0.068 (0.058)	0.003 (0.051)	-0.061 (0.047)	0.007 (0.053)
Market-to-Book-Value	0.005* (0.003)	-0.002 (0.003)	0.000 (0.002)	0.002 (0.003)
Extraordinary-Items	0.243*** (0.028)	0.252*** (0.027)	0.236*** (0.022)	0.265*** (0.033)
Busy-Season	0.092*** (0.023)	0.132*** (0.023)	0.065*** (0.021)	0.134*** (0.024)
Auditor-Change	-0.106* (0.064)	-0.199*** (0.056)	-0.172** (0.074)	-0.112** (0.051)
IFRS	0.077 (0.048)	-0.161** (0.072)		
US-GAAP	0.272*** (0.101)	0.166* (0.092)		
Country dummies	yes	yes	no	yes
Industry dummies	yes	yes	yes	yes
Year dummies	yes	yes	yes	yes
Constant	5.515*** (0.414)	3.762*** (0.527)	5.524*** (0.246)	3.417*** (0.398)
R-squared	0.797	0.880	0.670	0.867
Observations	6130	6200	4709	7621

\* p<0.10, \*\* p<0.05, \*\*\* p<0.01. The dependent variable for all specifications is the natural logarithm of Audit fees. Specification (1) and (2) report the regression results based on the enhanced model of audit fees for firms that have below median yearly industry sales (i.e., smaller firms in the industry) and above median yearly industry sales (i.e., larger firms in the industry), respectively. Specification (3) estimates the enhanced audit fee model only for US firms. Specification (4) estimates the enhanced audit fee model for non-US firms. All variables are defined in Table 1 and Appendix A. Standard errors are reported in parentheses.

**Table 6. Robustness: CSR Performance and Audit Fees with alternative measures of CSR Performance**

	(1)	(2)	(3)
Environmental-Score	-0.391*** (0.121)		
Environmental-Score <sup>2</sup>	0.567*** (0.115)		
Social-Score		-0.254** (0.112)	
Social-Score <sup>2</sup>		0.408*** (0.105)	
D-SOCIAL-KLD			-0.018** (0.008)
D-SOCIAL-KLD <sup>2</sup>			0.009*** (0.001)
Size	0.610*** (0.008)	0.614*** (0.008)	0.498*** (0.012)
H-Index	-0.214 (0.219)	-0.241 (0.219)	-0.088 (0.318)
Current-Ratio	-0.070*** (0.007)	-0.069*** (0.007)	-0.075*** (0.009)
Receivables-and Inventory-to-Total-Assets	0.096 (0.086)	0.118 (0.086)	0.421*** (0.110)
Return-on-Assets	0.037 (0.131)	0.039 (0.131)	-0.055 (0.162)
Loss-in-Current-Year	0.042 (0.028)	0.048* (0.028)	0.069* (0.037)
Auditor-Tenure	-0.001 (0.002)	-0.001 (0.002)	-0.012*** (0.003)
Auditor-Specialization	0.123*** (0.033)	0.114*** (0.033)	0.131*** (0.038)
Leverage	0.027 (0.050)	0.036 (0.050)	0.218*** (0.058)
Current-Assets-to-Total-Assets	0.761*** (0.067)	0.760*** (0.067)	0.618*** (0.081)
Sales-Growth	-0.031 (0.039)	-0.033 (0.039)	-0.027 (0.048)
Market-to-Book-Value	0.002 (0.002)	0.002 (0.002)	-0.001 (0.003)
Extraordinary-Items	0.254*** (0.020)	0.254*** (0.020)	0.240*** (0.022)
Busy-Season	0.114*** (0.017)	0.111*** (0.016)	0.064*** (0.021)
Auditor-Change	-0.149*** (0.043)	-0.147*** (0.043)	-0.185** (0.073)
IFRS	0.021 (0.040)	0.019 (0.040)	
US-GAAP	0.254*** (0.071)	0.256*** (0.070)	
Country dummies	yes	yes	no
Industry dummies	yes	yes	yes
Year dummies	yes	yes	yes
Constant	3.919*** (0.328)	3.706*** (0.315)	8.126*** (0.432)
R-squared	0.844	0.844	0.680
Observations	12330	12330	4474

\* p<0.10, \*\* p<0.05, \*\*\* p<0.01. The dependent variable for all specifications is the natural logarithm of Audit fees. Specifications (1) to (3) report the regression results based on our enhanced model of audit fees. Specifications (1) and (2) restrict the definition of CSR to the Environmental-Score and the Social-Score, respectively. Specification (3) uses the D-SOCIAL-KLD measure to capture CSR performance, which is only available for US listed firms in our sample. All variables are defined in Table 1 and Appendix A. Standard errors are reported in parentheses.

**Table 7: Pre-Audit Misstatement Risk Analysis**  
**Panel A: Descriptive Statistics (n=3771)**

Variable	Mean	St. Dev.	Min	Max
Rest	0.0660	0.2484	0.0000	1.0000
CSR-Score	0.5004	0.2863	0.0723	0.9768
CSR- Score <sup>2</sup>	0.3324	0.3053	0.0052	0.9540
Total-accrual	0.0362	0.2363	-0.7560	0.5962
Drec	-0.0026	0.0358	-0.1482	0.1130
Dinv	-0.0007	0.0310	-0.1381	0.1231
Soft-assets	0.5541	0.2202	0.0294	0.9720
Dcsale	0.0923	0.1830	-0.5279	2.4226
Droa	0.0001	0.0939	-0.5206	0.4635
Issuance	0.0167	0.1282	0.0000	1.0000
Abret	0.0271	0.3698	-0.7870	1.8030

**Panel B: Model for Estimating Pre-Audit Misstatement Risk**

	DV: Rest	Predicted sign	(1)
CSR-Score		+	3.1926*** (1.1420)
CSR-Score <sup>2</sup>		-	-4.2523*** (1.1843)
Total-accrual		+	0.0226 (0.2712)
Drec		+	2.2811 (1.9115)
Dinv		+	4.4871** (2.1944)
Soft-assets		+	0.1201 (0.2970)
Dcsale		+	0.2693 (0.3542)
Droa		-	-1.5953** (0.7020)
Issuance		+	0.8073** (0.3906)
Abret		+	0.2223 (0.1758)
Abret (t-1)		+	0.0450 (0.1336)
Constant		-	-1.7658*** (0.2859)
Observations			3771
Pseudo R2			0.0228
Model likelihood ratio Chi-square			41.83
Model p-value			0.0000

\* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Panel A presents the descriptive statistics of the variables used in the analysis of the misstatement detection model, while panel B shows the estimation results. The dependent variable Rest equals 1 if the annual report for the current year is subsequently restated, and 0 otherwise. CSR-Score is the average of the ASSET4 benchmarked Social and environmental Performance scores. It takes values between zero and one. Total-accruals is measured as the change in noncash assets (noncash total assets minus total liabilities and preferred stocks) from year t-1 to year t scaled by average total assets. Drec is the change in accounts receivables over total assets. Dinv is the change in inventory over total assets. Soft-assets are the proportion of soft assets (Total assets - Property, Plants and equipment - Cash and Short-Term Investments) to total assets. Dcsale is the percentage change in cash sales (cash sales = sales - the change in inventory). Droa is the change in Return on assets. Issuance is a dummy variable taking the value of 1 if the firm issued debt or equity securities during year t, and zero otherwise. Abret is the annual buy-and-hold stock return minus annual buy-and-hold value weighted NYSE-AMEX-NASD index return. Standard errors are reported in parentheses.