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Does the severity of a client's negative environmental, social and governance reputation affect audit effort and audit quality? ☆

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ABSTRACT

In recent years, investors have begun to value companies' reputations through their environmental, social, and governance (ESG) practices. ESG risk can affect business processes and controls and can heighten financial risk and threaten a firm's survival. This study examines whether and how the severity of media coverage of a firm's *negative* ESG issues (tainted ESG reputation) is associated with audit effort and audit quality. I find that auditors manage the higher expected engagement risk conveyed by tainted ESG reputation by applying higher audit effort. Next, I observe that the increased effort is associated with auditors likely detecting and requiring adjustments for material misstatements and that tainted ESG reputation is associated with fewer misstatements (i.e., reduces poor audit quality). The association between tainted ESG reputation and audit quality is driven primarily by increased audit report lag, not by increased audit fees. Further, I find that tainted ESG reputation is positively associated with audit effort and reduces poor audit quality for up to three years. The results also show that the audit effort and audit quality effect vary across the three components of ESG.

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1. Introduction

Investors have long focused on the reputations of companies (e.g., Demiroglu and James, 2010; Helm, 2007; Shane and Cable, 2002) and, in recent years, have directed their attention to companies' environmental, social, and governance (ESG) practices (Bernow et al., 2017; Committee of Sponsoring Organizations of the Treadway Commission [COSO], 2018). When a company's ESG practices falter, the market reacts negatively (e.g., Capelle-Blancard and Petit, 2019; Grewal et al., 2018).[1]

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[1] Some examples: (i) British Petroleum lost half of its share value in three months following the Deepwater Horizon oil spill in April 2010 (Smith et al., 2011); (ii) Facebook lost $37 billion in market value after public outrage following news reports that Cambridge Analytica illegally accessed the information of millions of Facebook users - https://www.malaymail.com/news/opinion/2018/03/22/facebooks-pr-crisis-is-largely-self-inflicted-kara-alaimo/1604607; (iii) although the Fukushima Daiichi nuclear disaster in March 2011 was a direct consequence of the Great East Japan Earthquake, many blamed the governance failures of TEPCO for the extent of the accident, and TEPCO's market value has since collapsed (Lopatta and Kaspereit, 2014).

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The significance of ESG factors to today's investors is articulated in a January 2018 letter from Laurence Fink, chairman and CEO of BlackRock, to the leadership of the world's largest companies.[2] Fink asserts that addressing ESG-related risks is key to long-term value creation. Consistent with this, growing investor pressure on corporate managers to address ESG risks has driven new regulations mandating ESG disclosures in a number of countries.[3]

The United States has no policy requiring firms to publicly disclose ESG factors. The Securities and Exchange Commission (SEC) retreated from a proposal to implement ESG disclosure after receiving comments on its proposed rules, even though the comments were generally supportive.[4] Absent mandatory ESG disclosure, the media disseminates information about companies' ESG actions to investors. Recent empirical evidence suggests that the intensity and reach of media coverage of a firm's ESG mistakes can harm investors' perceptions of a firm and can heighten their assessment of its financial risk (Kölbel et al., 2017).

Like investors, a firm's auditor will be aware of the media coverage of its ESG misdeeds and can provide assurance on how ESG practices could affect the firm's financial statements (Burke et al., 2019; Sharma et al., 2018). An important question is whether and how auditors respond to media coverage of ESG problems. Studies have focused on auditor responses to firms' self-reported environmental initiatives or social responsibility performance (e.g., LópezPuertas-Lamy et al., 2017; Sharma et al., 2018). But these measures differ from the media reports examined in this study. To address this paper's research question, I first examine the association between the level of intensity of media coverage of a firm's bad ESG reputation ("tainted ESG reputation") and audit effort.[5] I propose that tainted ESG reputation will heighten client risks and will be positively associated with audit effort, as captured by audit report lag.[6] To test this association, I use a sample of 6448 firm-year observations from the period 2007–2014. After controlling for known determinants, I find a positive association between tainted ESG reputation and audit report lag. On average, a tainted reputation increases audit report lag by 3.13 days.[7]

Second, I examine the association between tainted ESG reputation and audit quality. Since ESG missteps likely heighten client business risks, I propose auditors will expend greater effort that manifests in higher audit quality, as captured by the lower likelihood of a financial restatement.[8] My findings support this view. I observe that, on average, a client's tainted ESG reputation reduces the likelihood of a restatement by 13.47% and the likelihood of a restatement relating to core earnings by 25.63%. Thus tainted ESG reputation is associated with greater audit quality.

To gain insight into this association, I examine whether the greater audit quality is conditional on increased audit effort. Specifically, I interact tainted ESG reputation with audit report lag and examine its effect on the likelihood of a restatement. I find that the interaction term is negative, suggesting that this association is explained by auditors applying greater effort.

I perform several robustness tests. First, to address endogeneity concerns arising from unobservable omitted correlated variables, I estimate two-stage ordinary least squares (OLS) regressions and find the results are consistent with the primary ones. Second, Burke et al. (2019) find that auditors increase audit fees in response to ESG missteps. The literature often uses audit fees as a proxy for audit effort. This raises the concern that the audit report lag measure used here captures a fee effect and provides no new evidence, relative to Burke et al. (2012). Even though Burke et al. (2019) do not examine how tainted ESG reputation relates to audit quality, the negative association between tainted ESG reputation and poor audit quality documented in this study may be driven by fees and not by audit report lag. Studies show that audit report lag captures audit effort beyond audit fees and that it proxies for audit effort (e.g., Knechel and Payne 2001; Knechel et al. 2009; Knechel and Sharma, 2012). Knechel and Sharma (2012) argue that audit report lag better measures audit effort than fees because the latter captures attributes, such as low balling, audit market effects, and risk premium, unrelated to effort. I perform tests and find that the negative association between tainted ESG reputation and poor audit quality observed here is attributable to audit report lag and not to fees.

Third, my primary findings are based on contemporaneous data. As an additional robustness test, I assess how tainted ESG reputation in the current fiscal year is associated with future audit effort and quality. To my knowledge, no prior study has considered this. In all empirical tests, I find that tainted ESG reputation in the current fiscal year is positively associated with audit effort and negatively associated with poor audit quality for up to three years. Fourth, I examine how each of the three

[2] See https://www.blackrock.com/corporate/investor-relations/larry-fink-ceo-letter. According to *Business Insider*, Blackrock manages $6.3 trillion in assets. See http://www.businessinsider.com/blackrock-ceo-larry-fink-just-sent-a-warning-to-ceos-everywhere-2018–1?IR=T.

[3] Examples include European Union directive on disclosure of nonfinancial information (see https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014L0095) and Australia's ESG reporting guide, which requires listed companies to disclose material exposure to ESG risks (see https://www.asx.com.au/documents/asx-compliance/esg_reporting_guide_mar14.pdf).

[4] See https://www.sec.gov/comments/s7-06–16/s70616.htm for public comments on SEC Concept Release Number 33–10064. The SEC received over 25,000 comments. See https://static1.squarespace.com/static/583f3fca725e25fcd45aa446/t/5866d3c0725e25a97292ae03/1483133890503/Sustainable-Economy-report-final.pdf for a summary of the comments. The 2017 SEC updated proposal did not address ESG disclosures (see https://www.sec.gov/rules/proposed/2017/33–10425.pdf).

[5] Studies demonstrate potential linkages between a client's business risk and audit inputs (e.g., Bell et al., 2008; Bell et al., 2001; Lyon and Maher, 2005). However, tainted ESG reputation has become a business risk only in the last decade (COSO, 2018) and has different characteristics (see a description in Appendix A) than traditional client business risk factors (e.g., poor profitability, solvency issues, internal control problems, etc.) examined elsewhere.

[6] I compute a tainted ESG reputation score using data from RepRisk AG. I discuss the RepRisk data, including RepRisk's methodology, in Section 3.2.

[7] This is meaningful because audit delay is generally associated with earnings announcement delay (Bamber et al. 1993; Krishnan and Yang 2009) and there is evidence that markets respond negatively to earnings announcement delay, even of a single day (Bagnoli et al., 2002; Chambers and Penman, 1984; Duarte-Silva et al., 2013).

[8] DeFond and Zhang (2014) and Shibano (1990) argue that higher audit effort should relate negatively to likelihood of a financial restatement, regardless of the level of inherent risk.

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components of ESG reputation—environmental, social, and governance—affect audit effort and quality. The results suggest that auditors increase audit effort if the tainted ESG reputation relates to environmental or governance risks but not if it relates to social issues. In addition, environment- and governance-related risks decrease the likelihood of a restatement, while social-related risks increase it.[9] Finally, I eliminate governance control variables from the regressions, use alternative measures of tainted ESG reputation and audit quality, and include audit committee variables in the restatement models. In each case, I find consistent results.

The study makes several contributions to the literature. First, it extends the literature on corporate reputation and audit quality. Cao et al. (2012) document that highly reputable firms have higher audit quality.[10] I show that firms with bad reputations can also have higher audit quality, because their auditors spend more time on their financial statements. Thus this is the first study, to my knowledge, to document that auditors respond to tainted ESG reputation and that their work leads to higher audit quality. Moreover, the effects documented here persist for up to three years, implying that auditors are being cautious in their approach for clients with tainted ESG reputations.

Second, the findings here extend those of two recent studies—Sharma et al. (2018) and Burke et al. (2019). Sharma et al. (2018) find that auditors charge higher audit fees for clients' environmental initiatives, due to the risks of those initiatives and not due to higher audit effort. However, as indicated previously, those authors focus on strategic environmental initiatives (a positive environmental factor) that is distinct from the negative media reports examined here. Therefore I extend Sharma et al.'s (2018) findings by showing that auditors respond to negative media ESG reports by increasing their effort, which translates to higher audit quality. Burke et al. (2019) likewise demonstrate that auditors increase their fees for clients with tainted ESG reputations.[11] I extend their study by documenting that auditors are responding to ESG risks through greater audit effort after controlling for fee effects. Further, I demonstrate that the higher audit quality of clients with tainted ESG reputations is likely due to increased audit effort. In this vein, my results support the argument that audit report lag better captures audit effort than does audit fees as espoused by Knechel and Sharma (2012).

This study has practice and policy implications. First, as indicated previously, investors are valuing firms' reputations based on their ESG practices, but their ability to do so may be constrained by the lack of policies mandating ESG disclosures. This study provides insights on how auditors deal with ESG (Sharma et al. 2018). Second, the 2000 Sustainability Reporting Guidelines of the Global Reporting Initiative (GRI) advocate for raising sustainability reporting practices to a level equivalent to that of financial reporting. The GRI guidelines also recommend that ESG disclosures be audited (Willis, 2003). My finding that auditors exert higher effort in response to tainted ESG reputation, even absent mandated disclosures, should comfort the GRI. Third, my findings on the three components of ESG reputation should contribute to the ongoing debate on whether the SEC should mandate ESG disclosures and whether regulators should incorporate ESG risks into auditing standards. My findings that auditors do not increase audit effort in response to tainted *social-related* ESG reputation and that restatements affecting core earnings are more likely in these cases suggest that new public policies may be needed. Given investors growing interest in ESG information, the SEC may want to revisit the disclosure requirements, and auditing standard setters could consider incorporating components of ESG risks into their risk assessment standards.

In the next section, I discuss the literature and develop hypotheses. In the third section, I describe the sample and research design, and in the fourth section, I present the results and additional analyses. The fifth section concludes.

2. Background and hypotheses development

2.1. Corporate reputation

Research on organizational legitimacy (e.g., Meyer and Rowan, 1977; Oliver, 1991; Suchman, 1995) suggests that organizations need social approval to obtain resources and survive. Media and consumer groups disseminate information about firms. This information can influence stakeholders' perceptions and can affect a firm's social approval (Fombrum, 1996; Fombrun and Shanley, 1990; Pollock and Rindova, 2003). Firms, in turn, can leverage positive reputations to help them achieve and sustain competitive advantages (Deephouse, 2000; Deephouse and Carter, 2005; Pollock and Rindova, 2003). For example, companies with good reputations can charge premium prices (Rindova et al., 2005; Shapiro, 1983) and reduce transaction costs (Deephouse, 2000; Deephouse and Carter, 2005; Shapiro, 1983). It is therefore not surprising that, according to the World Economic Forum, corporate reputation represents more than 40% of a company's market capitalization.[12]

Yet crises and scandals can easily mar a firm's reputation. A bad reputation can reduce social approval (Zavyalova et al., 2012), alienate key stakeholders (Deephouse and Carter, 2005), threaten legitimacy and survival (Fombrum, 1996; Suchman, 1995), and affect purchase intentions (Coombs, 2007; Coombs and Holladay, 2006). It also can lead to less optimistic analyst forecasts (Jackson, 2005) and downgrades of buy recommendations (Fang and Yasuda, 2009). Thus a bad reputation can result in lost revenues, destruction of shareholder value, and higher operating, financing, and regulatory costs. In recent

[9] Social-related ESG risks increase the likelihood of a restatement affecting core earnings only.

[10] Cao et al. (2012) use firms listed on the Fortune's Most Admired Companies (FMAC) as proxy for highly reputable ones. The FMAC list is not limited to ESG factors.

[11] Similarly, LópezPuertas-Lamy et al. (2017) find a negative association between good corporate social responsibility (CSR) performance and audit fees.

[12] See http://web.worldbank.org/archive/website00818/WEB/OTHER/CORPORAT.HTM.

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years, reputational concerns have shifted from more traditional geopolitical, technological, and economic risks to ESG risks (COSO, 2018).

2.2. Accounting research on corporate reputation

Empirical accounting research shows that socially and environmentally responsible firms are less likely to engage in accruals and real earnings manipulation (Chih et al., 2008; Kim et al., 2012; Litt et al., 2013), are less aggressive in avoiding taxes (Hoi et al., 2013), can issue bonds at lower cost (Ge and Liu, 2015), and receive better credit ratings (Attig et al., 2013). Environmentally responsible firms derive capital market benefits in the form of higher market valuation (Sharma et al., 2018). Bernardi and Stark (2018) suggest that the levels of CSR and environmental disclosure have value relevance to informed market participants. Chen et al. (2012) and LópezPuertas-Lamy et al. (2017) find that firms with socially responsible initiatives pay lower audit fees, and Sharma et al. (2018) find a positive association between environmental initiatives and audit fees. These studies differ from mine in several ways. First, while the above studies document the benefits of social and environmental initiatives, they do not examine ESG risks. This focus is perhaps due to a lack of data. The RepRisk data used here helps overcome this. Second, the above studies typically use MSCI (formerly KLD)'s CSR/environmental performance data, which relies on surveys and company reports that have not been verified externally (Porter and Kramer, 2006). In contrast, the data forming RepRisk's ESG risk scores (discussed in Section 3.2) is derived from media sources. Third, the above studies do not examine the implications of ESG risks for audit quality. Therefore my study extends the literature.

A more recent study, by Burke et al. (2019), employs RepRisk's ESG risks data to examine auditor response to clients' ESG reputation risk. The authors find that auditors either resign from the audit or increase their fees in response to clients' ESG risk exposure. The authors do not, however, examine the reason behind the higher audit fees finding. This gap is important to address, because higher audit fees could either reflect more audit effort or simply be a risk premium that auditors charge clients with bad ESG practices. (See a review of the literature by DeFond and Zhang (2014)) Auditors may charge higher fees to risky clients due to the effort required to audit their financial statements, but the additional effort may not translate to higher audit quality (DeFond and Zhang, 2014). Thus I focus on audit report lag as a proxy for audit effort and control for audit fees in audit effort tests.

2.3. Hypotheses development

The audit profession, through auditing standards, has long emphasized the risks, including litigation and bad publicity, of audit failures. PCAOB Auditing Standard number 1101 (AS 1101) indicates that an audit failure is a function of inherent risks, control risks, and detection risks (PCAOB, 2010). The auditor assesses and documents the level of both control and inherent risk (typically encompassing a client's business risks) on the basis of an evaluation of the client (Bell et al., 2001; Knechel, 2001). The combination of inherent and control risk constitutes the risk of material misstatements in the financial statements. When this risk is high, auditors must reduce detection risk to lower the audit risk. Auditors do this by increasing their effort. Thus a higher risk of material misstatements should lead to greater audit effort (Bell et al., 2001). However, as argued previously, ESG risks have unique characteristics. The primary guidance that auditors use to assess risk of material misstatements, contained in AS 8, provides no inferences in regard to ESG factors.[13] Thus we do not know whether ESG-related events, such as the public outrage in response to the news that Cambridge Analytica accessed information from approximately 50 million Facebook users, impact auditors' assessment of the risk of material misstatements in financial statements and lead them to adjust their audit effort. This provides an opportunity to examine the association between tainted ESG reputation and audit effort.

The literature often associates audit report lag with the effort required to audit the financial statements (e.g., Ashton et al., 1989; Bamber et al., 1993; Chan et al., 2012; Knechel and Sharma, 2012; Masli et al., 2010) and with audit efficiency (e.g., Knechel et al., 2009). Knechel et al. (2009) demonstrate that audit report lag is a reasonable proxy for audit effort. Therefore an association between a tainted ESG reputation and audit report lag would establish a link between tainted reputation and audit effort. Taken together, the discussion on audit report lag suggests the following hypothesis.

H1. There is a positive association between tainted ESG reputation and audit report lag.

H1 suggests that auditors increase audit effort in response to tainted ESG reputation. Whether this increased effort translates to higher audit quality is the second main issue examined here. Hillegeist (1999) and Shibano (1990) posit that higher audit effort translates to higher quality, which is supported by post-SOX evidence (e.g., Blankley et al., 2012; Kinney et al., 2004; Lobo and Zhao, 2013). This body of evidence and the audit risk model suggest that, when clients exhibit heightened risks, auditors will design tests to gather additional audit evidence, with the idea being that greater effort will increase the chances of detecting material misstatements (e.g., Bell et al., 2008; Bell et al., 2001; Lyon and Maher, 2005). As such, higher audit effort should lead to higher quality financial statements. Arguably, ESG risks can translate to greater client risk, which can heighten the risk of material misstatements and increase the likelihood of a restatement. Dittenhofer (1995) and Watson and Mackay (2003) urge auditors to consider the risk that environmental issues, for example, could affect business processes

[13] Under AS 1101, an audited client's inherent risk is higher and can translate to risk of material misstatements in situations involving complex accounting transactions, a lack of sufficient capital to continue operations, and declining conditions affecting the company's industry that might create pressures or opportunities for management to misstate the financial statements.

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and internal controls, which can increase financial reporting risk. In such circumstances, auditors are expected to work harder to obtain sufficient evidence to lower the risk of an audit failure. This can include understanding and evaluating how tainted ESG reputation could impact the financial condition of the client and responding with appropriate audit procedures and resources. Thus auditors can increase credibility of financial statements for clients with tainted ESG reputations by recognizing the financial reporting risk implications and responding appropriately.

Restatements of financial statements are a direct measure of audit quality because they indicate an overt audit failure (DeFond and Zhang, 2014). Thus the absence of restatements indicates higher audit quality.[14] Based on the arguments of Shibano (1990) and Hillegeist (1999) and the audit risk model (AS 1101) and considering post-SOX evidence on the association between audit effort and quality (e.g., Blankley et al. 2012; Lobo and Zhao 2013), I expect firms with tainted ESG reputations to exhibit higher audit quality, not because of the client's characteristics but because of increased audit effort. Thus I expect a negative association between tainted ESG reputation and the likelihood of a restatement, and I expect this association to be conditional on audit effort. These expectations are captured in hypotheses 2a and 2b below.

H2a. There is a negative association between tainted ESG reputation and the likelihood of a future restatement of the current year's financial statements.

H2b. The negative association between tainted ESG reputation and the likelihood of a restatement is conditional on increased audit effort.

3. Sample and research design

3.1. Sample

The sample consists of all U.S. publicly traded companies covered in the RepRisk database from fiscal year 2007–2014 with available data in the Compustat, Audit Analytics, GMI Ratings, and BoardEx databases. I begin the sample in fiscal year 2007 because RepRisk data coverage begins in 2007. I exclude financial firms because their financial reporting differs from that of nonfinancial firms and because they have different corporate governance structures. There are 11,895 nonfinancial firms covered in the RepRisk database for the sample period. I eliminate 2225 (or 18.71%) observations because they lack the necessary financial data in Compustat. After excluding firms with missing data in Audit Analytics and BoardEx or other missing control variables, the sample consists of 7266 firm-year observations for restatement analyses and 6448 firm-year observations for audit report lag analyses. Table 1, Panel A, provides details of sample selection, and Table 1, Panel B provides the industry composition of observations in the final sample for the audit report lag model. Due to the magnitude of data loss between RepRisk and Compustat databases, Panel B also compares the industry composition of observations in the final sample with that of nonfinancial firms in the Compustat database over the sample period. As shown in Panel B, the industry composition of observations in the final sample is close to the industry composition of nonfinancial firms in the Compustat database, suggesting that the data attrition is not limited to a particular industry or handful of industries.

3.2. Tainted ESG reputation data

I construct tainted ESG reputation measures using data from RepRisk AG, a Swiss-based business intelligence data provider. Using a global big data approach, RepRisk tracks the ESG performance of over 55,000 publicly traded and private companies. On a daily basis, RepRisk screens, in 15 different languages, over 80,000 media, stakeholder, and other public sources for news items that *criticize* companies for ESG issues. Once an incident is identified, analysts conduct additional screening to verify that the incident is indeed ESG-related, remove possible duplicates, identify the nature of the incident, and classify it into one of 28 categories. Each incident is also given proprietary scores for severity (the harshness of the perceived impact of the incident) and reach (the influence or the readership of the source). Finally, an ESG reputation risk index (RRI), is constructed for each firm, based on a proprietary formula of the counts and scores. RepRisk calculates peak RRI, which denotes the highest level of media and stakeholder exposure of a firm related to ESG issues over the last 24 months. Each month, RepRisk also calculates current RRI, which denotes the current level of a firms' media and stakeholder exposure to ESG-related issues. The peak and current RRI indexes typically range from zero (lowest exposure) to 100 (highest exposure). However, a firm can have current or peak RRI of −1, indicating that it experienced no ESG-related issues and its RRI never went above zero.[15] RepRisk also provides component scores for environmental, social, and governance risk.

[14] A disadvantage of restatements as a measure of audit quality is that the absence of restatement could also indicate good pre-audited financial statements generated through the client's high-quality financial reporting system (DeFond and Zhang, 2014). Nonetheless, restatements is a direct and reliable measure of audit quality (DeFond and Zhang, 2014).

[15] An RRI score of −1 differs from zero RRI because the latter denotes that the RRI was once above zero but has since fallen.

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Table 1
Sample selection and industry membership.

Panel A: Sample selection

	Observation
Universe of U. S non-financial firms covered in RepRisk from fiscal year 2007–2014	11,895
Less observations with missing data in Compustat files	(2,225)
Less observations with missing audit fees data from Audit Analytics	(247)
Less firms with missing governance data in BoardEx and GMI Ratings	(1,549)
Less observations without other control variables	(608)
Final sample: likelihood of restatement models	**7,266**
Less observations with missing audit report lag from Audit Analytics	(818)
Final sample: audit report lag model	**6,448**

Panel B: Industry composition

Industry Name	Frequency	Percentage	Compustat Population Percentage
Consumer non-durables	504	7.82%	5.01%
Consumer durables	201	3.12%	2.63%
Manufacturing	829	12.86%	9.24%
Oil, gas, and coal extraction and products	560	8.68%	7.31%
Chemicals and Allied Products	309	4.79%	2.67%
Business equipment	883	13.69%	19.96%
Telephone and television transmission	126	1.95%	3.51%
Utilities	456	7.07%	4.78%
Wholesale, retail, and some services	995	15.43%	8.43%
Healthcare, medical equipment, and drugs	597	9.26%	14.69%
	5,460	84.65%	78.24%
All others	988	15.35%	21.76%
Total Sample	6,448	100.00%	100.00%

Numerous high-profile global firms and institutions, including some of the Big Four accounting firms, use RepRisk data to assess ESG reputation risk. Global companies that subscribe to RepRisk ESG data include Bank of America, Barclays Bank, Citi Bank, Deloitte, KPMG, PricewaterhouseCoopers, Société Générale, UBS, and World Bank Group.[16] In addition, recently published empirical studies examining corporate reputation risk often use RepRisk (e.g., Burke et al., 2019; Cui et al., 2018; Kölbel et al., 2017; Schembera and Scherer, 2017).[17]

3.3. H1: Audit effort model

To test for the effect of tainted ESG reputation on audit effort (as proxied by audit report lag), I estimate Eq. (1) below, based on prior audit report lag research (e.g., Knechel and Payne, 2001; Knechel and Sharma, 2012; Krishnan and Yang, 2009; Tanyi et al., 2010).

$$AULAG = \beta_0 + \beta_1 BADREP_t + Controls_t + INDUSTRY\ \ FE + YEAR\ \ FE + \varepsilon. \quad (1)$$

3.3.1. Dependent variable: audit report lag

I use audit report lag as proxy for audit effort. *AULAG* is the natural logarithm of the difference in days between a firm's financial year-end and the signature date of the audit report.

3.3.2. Independent variable: tainted ESG reputation

As indicated previously, RepRisk provides both peak RRI, which denotes the highest level of tainted ESG reputation over the past 24 months (or periods *t* and *t-1*), and current RRI, which denotes the level of tainted ESG reputation for each month. During audit planning, auditors will likely incorporate the client's level of ESG risk exposure in the current (period *t*) and prior (period *t-1*) fiscal years into their determination of risk of material misstatements, which affects their audit effort.[18] Therefore the independent variable—tainted ESG reputation or *BADREP*—equals the firm's peak RRI.[19] Thus *BADREP* for any given

[16] See https://www.reprisk.com/our-clients.
[17] For example, Kölbel et al. (2017) find that reputation risk is associated with higher credit risk.
[18] For example, in the case of the Wells Fargo scandal, which was first reported in fiscal 2016, information available in Audit Analytics suggests that the company's auditors increased the number of days they spent auditing the financial statements from 55 in fiscal 2015 (pre-scandal) to 60 in both fiscal 2016 and 2017. Thus the higher audit effort observed in fiscal year 2017 reflects the ESG-damaging event in the prior fiscal year.
[19] In the "Additional Analyses" subsection, I replace peak RRI with average current RRI over the last 12 months. This measure confines *BADREP* to reputation-damaging event(s) in year *t*. Further, I examine how the granular measures—environmental (*BADREPe*), social (*BADREPs*), and governance (*BADREPg*) — relate to the issues examined in this study.

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fiscal year captures year-to-year variation in tainted ESG reputation. I adjust *BADREP* by the yearly mean (raw peak RRI divided by the yearly mean of peak RRI) to reduce heterogeneity of annual variance in media criticism. I expect a positive sign on β_1, the coefficient on *BADREP*.[20]

3.3.3. Control variables

The audit report lag model includes a myriad of control variables that have been established in the literature (e.g., Ashton et al., 1989; Bamber et al., 1993; Ettredge et al., 2006; Knechel and Payne, 2001; Knechel and Sharma, 2012; Krishnan and Yang, 2009) as being associated with audit report lag: firm size (*SIZE*), loss (*LOSS*), risk of bankruptcy (*ZSCORE*), business segments (*BUSEG*), acquisition (*MERGER*), foreign operations (*FOREIGN*), profitability (*ROA*), leverage (*LEVERAGE*), market-to-book ratio (*M/B*), new debt issue (*ISSUANCE*), firm age (*AGE*), material weakness in internal controls (*ICWEAK*), restatement announcement (*MISST*), Big Four audit firm (*BIG4*), auditor tenure (*AUDTEN*), going concern modification (*GCM*), busy audit season (*BUSY*), nonaudit fees (*NASFEE*), and audit fees (*AUFEE*). Based on the documented associations in the literature, I expect *LOSS*, *BUSEG*, *MERGER*, *FOREIGN*, *LEVERAGE*, *ISSUANCE*, *ICWEAK*, *MISST*, *GCM*, *BUSY*, and *AUFEE* to relate positively to audit report lag, and *SIZE*, *ROA*, *M/B*, *AGE*, and *BIG4* to relate negatively to audit report lag. I do not specify a direction for *ZSCORE*, *AUDTEN*, and *NASFEE*, due to the mixed findings in the literature. All models in this study include industry- and year-fixed effects. All continuous variables are winsorized at the top and bottom 1% of their distribution. All regressions in this study (tabulated and untabulated) are estimated with standard errors adjusted based on the Huber-White sandwich estimate of variances and include industry- and year-fixed effects. In Appendix B, I define the dependent variables in the main analyses (Panel A), dependent variables in the supplementary analyses (Panel B), test variables in the main analyses (Panel C), test variables in the supplementary analyses (Panel D), test control variables in the main analyses (Panel E), and test control variables used as instruments in the first stage of two-stage regressions (Panel F).

3.4. H2: Audit quality model

To test whether tainted ESG reputation is negatively associated with poor audit quality (H2a), I employ the functional form specified in Eq. (2), which is consistent with the literature (e.g., Blankley et al., 2012; Burns and Kedia, 2006; Chan et al., 2012; Efendi et al., 2007; Lobo and Zhao, 2013). To test whether audit effort in response to tainted ESG reputation translates to audit quality (H2b), I introduce an interaction term to Eq. (2) as specified in Eq. (3).

$$REST \ \ or \ \ REST\_CORE = \beta_0 + \beta_1 BADREP_t + Controls_t + INDUSTRY \ \ FE + YEAR \ \ FE + \varepsilon. \tag{2}$$

$$REST \ \ or \ \ REST\_CORE = \beta_0 + \beta_1 BADREP_t + \beta_2 AULAG_t + \beta_3 BADREP_t * AULAG_t + Controls_t + INDUSTRY \ \ FE + YEAR \ \ FE + \varepsilon. \tag{3}$$

3.4.1. Dependent variable: Likelihood of a restatement

I use two measures of the likelihood of material restatement of financial statements as an empirical proxy for audit quality. The first, *REST*, is an indicator variable that equals 1 in year *t* if that year's annual financial statements are restated and 0 otherwise. Burns and Kedia (2006) and Healy (1985) show that restatements affecting core earnings are more egregious and thus could be more embarrassing to the auditor. Therefore, using the details on financial restatements provided in the Audit Analytics database, I parse financial restatements affecting core earnings and noncore earnings to create an alternative dependent variable, *REST_CORE*, that equals 1 in year *t* if that year's annual financial statements are restated and the restatement affects core earnings and 0 otherwise.

The SEC rule on reportable events, which became effective on August 23, 2004, requires that, if a firm concludes that a financial statement can no longer be relied upon, the firm must file Form 8-K to disclose the details in Item 4.02 (nonreliance of previously issued financial statements). Item 4.02 restatements result primarily from a need for investigation into fraud (Badertscher et al., 2011) and indicate an overt failure of financial reporting and oversight (Abbott et al., 2004; Srinivasan, 2005). By definition, Item 4.02 restatements are material and egregious and therefore receive more negative market reactions than nonmaterial revision restatements do (e.g., Burks, 2011; Hennes et al., 2008; Iskandar-Datta and Jia, 2013). I identify restatement announcements from the selected fiscal year (2007, 2008, 2009, 2010, 2011, 2012, 2013, and 2014) to the fiscal year ending 2017. For example, to identify whether the fiscal year 2007 annual financial statements are restated, I search all reporting periods after 2007 up to the end of fiscal year 2017. This expanded horizon for identifying a restatement is important—because financial restatements often involve firm, auditor, and SEC investigations, several years may pass before a restatement is announced and reported (Dehaan et al., 2013; Karpoff et al., 2008a, 2008b). Further, I limit the nonreliance restatements to restatements with adverse effects, as these reflect low-quality audits.

3.4.2. Independent variable: tainted ESG reputation

The independent variable for Eq. (2), *BADREP*, is as defined for Eq. (1). H2b proposes that the association between tainted ESG reputation (*BADREP*) and poor audit quality (*REST* or *REST_CORE*) may be moderated by audit effort (*AULAG*). To empir-

[20] The results are quantitatively similar when I use unadjusted peak RRI.

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ically test this hypothesis, in Eq. (3), I compute an interaction term between *BADREP* and *AULAG*. Thus the test variable for H2b is the interaction term *BADREP*AULAG*. Since I hypothesize that audit effort in response to tainted ESG reputation should reduce the likelihood of a restatement, I predict that the coefficient on *BADREP*AULAG* will be negative.

3.4.3. Control variables

I include a comprehensive set of control variables, which are drawn from the literature on restatements (e.g., Blankley et al., 2012; Burns and Kedia, 2006; Chan et al., 2012; Efendi et al., 2007; Lobo and Zhao, 2013). Consistent with the literature, I expect the following control variables to relate positively to the likelihood of a restatement: *BUSEG*, *MERGER*, *FOREIGN*, *LEVERAGE*, *ICWEAK*, *MISST*, and restructuring activity (*RESTR*). I expect the variables *SIZE*, *ROA*, *AUDTEN*, *AUFEE*, auditor specialization (*SPECIALIST*), board independence (*BIND*), and institutional majority (*INSTMAJ*) to relate negatively to the likelihood of a restatement. I do not specify a direction for the variables *LOSS*, *BIG4*, *GCM*, number of board meetings (*BMEET*), and insider ownership (*INSIDE*), due to mixed findings in the literature.

4. Results

4.1. Descriptive statistics

Table 2 presents the descriptive statistics for the audit report lag and the likelihood of a restatement variables. The mean and median audit report lag are 56.812 and 57 days, respectively. The mean and median *REST* (*REST_CORE*) are 12.2% (4.8%) and 0.00 (0.00), respectively. The above descriptive statistics on audit report lag, *REST*, and *REST_CORE* are generally consistent with the literature. The mean and median unadjusted peak RRI are 15.80 and 17.00, respectively. According to RepRisk AG, peak RRI below 26 indicates low risk exposure, suggesting that, on average, firms in the sample have low ESG risk exposure. However, in untabulated statistics, the minimum and maximum unadjusted peak RRI are −1 and 81, suggesting wide variability among firms in the sample. The descriptive statistics for all control variables are generally consistent with the literature.

Table 3 presents the correlation between variables in the main regressions. Coefficients in bold are significant at the 5 percent level. I observe a positive and significant correlation between *BADREP* and *AULAG* but a negative and significant correlation between *BADREP* and both *REST* and *REST_CORE*. These results provide initial evidence suggesting, on a univariate basis, that firms with tainted ESG reputation experience longer audit delays and that their current period financial statements are less likely to be restated. All correlations for variables included in a same regression are below the 0.80 multicollinearity threat threshold (Kennedy, 2008). Moreover, the highest untabulated variance-inflation factor from the analyses is 2.86. This is well below the recommended threshold of 10, beyond which multicollinearity may be a problem (Kennedy, 2008).

4.2. Regression results

4.2.1. H1: Audit report lag

H1 predicts a positive association between tainted ESG reputation and audit report lag. In Table 4, I present an OLS regression of audit report lag on tainted ESG reputation. From the table, the tainted ESG reputation measure, *BADREP*, has a positive coefficient that is significant at $p < 0.01$. The results suggest that overall audit report lag increases in response to tainted ESG reputation. The marginal effect of *BADREP* on *AULAG* is also economically meaningful, as moving from the first to the third quartile of *BADREP* results in a 5.50 percent increase in audit report lag. The 5.50 percent change equates to an average increase of 3.13 days in audit report lag.[21] Results on the control variables in Table 4 are generally as expected. The control variables that are positive and significantly associated with audit report lag are *LOSS*, *MERGER*, *FOREIGN*, *LEVERAGE*, *ISSUANCE*, *ICWEAK*, *MISST*, *GCM*, *BUSY*, and *AUFEE*. The control variables that are negative and significantly associated with audit report lag are *SIZE*, *M/B*, and *BIG4*.

4.2.2. H2a: Likelihood of a restatement

H2a predicts a negative association between tainted ESG reputation and the likelihood of a restatement. In Table 5, I present two logistic regressions of the likelihood of restatement measures, *REST* (Column 1) and *REST_CORE* (Column 2) on tainted ESG reputation. From Column 1, the measure of tainted ESG reputation, *BADREP*, has a negative coefficient that is significant at $p < 0.01$. Similarly, from Column 2, *BADREP* has a negative coefficient that is significant at $p < 0.01$. The results suggest that overall a tainted ESG reputation decreases the likelihood both of a restatement in general and of a restatement affecting core earnings. The marginal effects of *BADREP* on *REST* (Column 1) and *REST_CORE* (Column 2) are economically meaningful, as I find that moving from the first quartile to the third quartile of *BADREP* results in a 13.47% reduction in the likelihood of a restatement and a 25.63% reduction in the likelihood of a restatement affecting core earnings.

[21] I use the "margins" function in STATA to estimate the adjusted predicted audit report lag, *AULAG*, at the first and third quartiles of the test variable, *BADREP*, while holding all other variables at their mean values (Williams, 2012). The STATA margins estimate of adjusted predicted values at the first and third quartiles of *BADREP* are 3.831961 and 4.042863 for *AULAG*. The change in predicted values equates to an increase of 5.50 percent or 3.13 days (i.e., 5.50% X 56.812 days).

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Table 2
Descriptive statistics.

Variable	N	Mean	Std	1st Quartile	Median	3rd Quartile
AULAG (Days)	6,448	56.812	20.187	52.000	57.000	60.000
AULAG	6,448	4.037	0.162	3.970	4.060	4.111
REST	7,266	0.122	0.327	0.000	0.000	0.000
REST_CORE	7,266	0.048	0.214	0.000	0.000	0.000
PeakRRI_unadj.	7,266	15.800	17.082	−1.000	17.000	30.000
BADREP	7,266	2.271	3.006	−0.174	2.006	3.798
SIZE	7,266	7.981	1.611	6.870	7.947	9.022
LOSS	7,266	0.176	0.381	0.000	0.000	0.000
ZSCORE	7,266	2.467	2.463	1.430	2.410	3.460
BUSEG	7,266	1.836	0.671	1.386	1.792	2.398
MERGER	7,266	0.247	0.431	0.000	0.000	0.000
FOREIGN	7,266	0.368	0.482	0.000	0.000	1.000
ROA	7,266	0.035	0.160	0.018	0.049	0.087
LEVERAGE	7,266	0.272	1.821	0.072	0.194	0.375
M/B	7,266	2.909	4.084	1.354	2.128	3.499
ISSUANCE	7,266	0.076	0.265	0.000	0.000	0.000
AGE	7,266	3.238	1.298	2.773	3.367	4.174
ICWEAK	7,266	0.029	0.168	0.000	0.000	0.000
MISST	7,266	0.075	0.263	0.000	0.000	0.000
BIG4	7,266	0.926	0.262	1.000	1.000	1.000
AUDTEN	7,266	2.483	0.766	2.079	2.485	3.045
GCM	7,266	0.010	0.102	0.000	0.000	0.000
BUSY	7,266	0.721	0.449	0.000	1.000	1.000
NASFEE	7,266	11.909	3.380	11.339	12.634	13.741
AUFEE	7,266	14.624	1.018	13.908	14.555	15.341
RESTR	7,266	0.400	0.490	0.000	0.000	1.000
SPECIALIST	7,266	0.314	0.464	0.000	0.000	1.000
BIND	7,266	0.730	0.157	0.636	0.750	0.857
BMEET	7,266	2.132	0.335	1.946	2.079	2.303
INSIDE	7,266	0.119	0.196	0.015	0.035	0.114
INSTMAJ	7,266	0.654	0.476	0.000	1.000	1.000

4.2.3. H2b: Audit effort, tainted ESG reputation, and the likelihood of a restatement

The results in H2a (Eq. (2)) show a negative association between tainted ESG reputation and poor audit quality. However, it is not known whether the audit quality effect is a function of firms' innate characteristics or of the increased audit effort observed in H1. If the audit quality effect is attributable to greater audit effort, then the interaction variable in Eq. (3), *BADREP*AULAG*, should be negative and significantly associated with *REST* (*REST_CORE*), and/or the sum of the coefficients for *BADREP* and *BADREP*AULAG* (*BADREP* + *BADREP*AULAG*) should be negative (Krishnan and Visvanathan, 2008). I present the results for *REST* in Table 6, Column 1, and for *REST_CORE* in Table 6, Column 2. I report the significance testing for the combined coefficients at the bottom of Table 6. From Columns 1 and 2, the interaction term, *BADREP*AULAG*, is negative and significantly associated with *REST* ($p < 0.05$) and *REST_CORE* ($p < 0.01$). The sum of the coefficients, *BADREP* + *BADREP*AULAG*, is negative and significantly associated with *REST* (Chi-sq 7.94; $p < 0.05$) and *REST_CORE* (Chi-sq 16.06; $p < 0.01$). Taken together, the results suggest that a longer audit report lag in response to tainted ESG reputation decreases the likelihood of a restatement and of a restatement affecting core earnings. Thus the negative association between tainted ESG reputation and the likelihood of restatements, which I observed in H2a, is primarily driven by increased audit effort in response to client's tainted ESG reputation.

4.3. Additional analyses

4.3.1. Two-stage model

Although the models control for several variables that can influence audit report lag and the likelihood of a restatement, the results on *BADREP* could still be driven by larger, more complex firms that attract more media coverage. Thus firm size and firm complexity may correlate with both *BADREP* and *AULAG* or with *BADREP* and *REST* or *REST_CORE*. I address this concern several ways. First, my *AULAG* and *REST* models each control for firm size and complexity variables. Second, as shown in Table 3, the correlations between *BADREP* and firm size (*SIZE*) and between *BADREP* and the firm complexity measures, *BUSEG* and *FOREIGN*, are 0.45, 0.10, and 0.04, respectively. These low correlations suggest that firm size and complexity are unlikely to affect the main results. Finally, for completeness, I address potential endogenous effects using a two-stage regressions approach.[22] I estimate two-stage regressions, wherein the first stage is a *BADREP* determinants model and the predicted value of *BADREP* or *BADREPPRE* is employed as a test variable in the second-stage regressions. A significant *BADREPPRE*

[22] The yearly mean for the variable *AULAG* ranges from 4.01 to 4.06 during the sample period, suggesting that *AULAG* is sticky. A two-stage approach is more suitable for addressing time-invariant omitted correlated variables when the variables of interest are stable over time.

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Table 3
Correlations.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
AULAG (1)	1.00																												
REST (2)	**0.07**	1.00																											
REST_CORE (3)	**0.06**	**0.60**	1.00																										
BADREP (4)	**0.18**	**−0.04**	**−0.05**	1.00																									
SIZE (5)	**−0.46**	**−0.04**	**−0.06**	**0.45**	1.00																								
LOSS (6)	**0.21**	**0.04**	**0.05**	**−0.08**	**−0.24**	1.00																							
ZSCORE (7)	**−0.09**	**−0.03**	−0.02	0.02	**−0.04**	**−0.39**	1.00																						
BUSEG (8)	**−0.11**	0.02	**−0.03**	**0.10**	**0.27**	**−0.11**	−0.02	1.00																					
MERGER (9)	**−0.03**	0.01	0.00	−0.02	**0.11**	**−0.03**	**−0.04**	**0.08**	1.00																				
FOREIGN (10)	−0.02	0.02	0.00	**0.04**	**0.05**	0.00	**0.05**	**0.07**	**0.08**	1.00																			
ROA (11)	**−0.20**	**−0.03**	**−0.04**	**0.08**	**0.22**	**−0.65**	**0.60**	**0.08**	0.02	**0.05**	1.00																		
LEVERAGE (12)	**0.05**	**0.07**	**0.03**	**0.03**	**0.22**	**0.25**	**−0.49**	**0.08**	0.02	**−0.11**	**−0.29**	1.00																	
M/B (13)	**−0.10**	**−0.04**	**−0.03**	**0.03**	0.00	**−0.07**	**0.24**	**−0.07**	0.00	−0.01	**0.13**	**−0.22**	1.00																
ISSUANCE (14)	**0.05**	0.00	0.00	**−0.03**	**−0.07**	0.00	0.02	**−0.05**	**0.10**	0.01	0.01	**−0.05**	0.01	1.00															
AGE (15)	**−0.13**	−0.02	−0.01	**0.15**	**0.24**	**−0.13**	**0.14**	**0.14**	−0.02	0.02	**0.12**	0.00	0.01	**−0.03**	1.00														
ICWEAK (16)	**0.20**	**0.17**	**0.18**	**−0.04**	**−0.12**	**0.11**	**−0.03**	**−0.05**	0.00	0.02	**−0.07**	**0.04**	−0.01	0.02	**−0.03**	1.00													
MISST (17)	**0.09**	**0.25**	**0.16**	−0.02	**−0.03**	**0.04**	**−0.04**	−0.01	0.01	0.00	−0.02	**0.06**	−0.01	0.00	−0.01	**0.20**	1.00												
BIG4 (18)	**−0.20**	0.04	0.02	**0.11**	**0.31**	**−0.07**	0.00	**0.10**	0.01	**0.04**	**0.06**	**0.06**	0.02	**−0.05**	**0.13**	**−0.05**	**0.03**	1.00											
AUDTEN (19)	**−0.17**	**−0.02**	**−0.04**	**0.16**	**0.29**	**−0.13**	**0.06**	**0.15**	**0.06**	0.01	**0.11**	**−0.03**	0.02	**−0.04**	**0.25**	**−0.10**	**−0.03**	**0.25**	1.00										
GCM (20)	**0.09**	**0.04**	**0.03**	**0.03**	0.02	**0.07**	**−0.08**	**0.03**	0.00	**0.06**	**−0.10**	**0.08**	**−0.03**	0.02	−0.02	**0.05**	**0.03**	0.02	**−0.04**	1.00									
BUSY (21)	0.01	**−0.04**	**−0.05**	0.00	**0.05**	**0.03**	**−0.20**	0.02	0.02	**0.03**	**−0.06**	**0.12**	0.02	0.00	**−0.07**	**−0.04**	−0.01	0.00	**−0.07**	0.02	1.00								
NASFEE (22)	**−0.23**	0.01	−0.01	**0.21**	**0.46**	**−0.12**	**0.04**	**0.18**	**0.12**	**0.16**	**0.11**	**0.03**	0.01	−0.01	**0.18**	**−0.08**	0.00	**0.31**	**0.21**	**0.03**	0.00	1.00							
AUFEE (23)	**−0.33**	−0.01	**−0.04**	**0.41**	**0.80**	**−0.15**	0.00	**0.32**	**0.16**	**0.25**	**0.15**	**0.12**	0.02	**−0.07**	**0.24**	**−0.03**	0.00	**0.32**	**0.26**	**0.08**	**0.05**	**0.52**	1.00						
RESTR (24)	**−0.10**	0.02	−0.01	**0.07**	**0.15**	**0.07**	**−0.06**	**0.12**	**0.18**	**0.23**	**−0.06**	**0.03**	−0.01	−0.02	**0.14**	0.01	0.02	**0.08**	**0.12**	**0.03**	0.01	**0.20**	**0.32**	1.00					
SPECIALIST (25)	**−0.04**	−0.02	−0.02	**0.09**	**0.11**	**−0.03**	**0.04**	**0.06**	−0.01	−0.01	**0.04**	**0.04**	0.00	−0.02	**0.09**	−0.01	0.00	**0.08**	**0.11**	0.01	**−0.04**	**0.09**	**0.13**	0.02	1.00				
BIND (26)	**−0.19**	**−0.04**	−0.02	**0.13**	**0.18**	**−0.09**	0.02	**0.07**	0.01	**0.03**	**0.06**	**−0.03**	**0.03**	−0.02	**0.17**	**−0.05**	−0.02	**0.12**	**0.13**	0.00	−0.01	**0.12**	**0.21**	**0.12**	0.02	1.00			
BMEET (27)	**−0.03**	**0.04**	**0.04**	**0.06**	**0.11**	**0.09**	**−0.15**	0.02	**0.10**	0.00	**−0.08**	**0.11**	**−0.04**	−0.02	**−0.04**	**0.04**	**0.03**	**0.04**	**−0.03**	0.00	**0.08**	**0.09**	**0.17**	**0.11**	0.01	**0.07**	1.00		
INSIDE (28)	**0.25**	0.01	−0.01	**−0.15**	**−0.26**	**0.09**	**0.03**	**−0.07**	**−0.07**	0.00	**−0.06**	0.01	**−0.03**	0.01	**−0.08**	**0.03**	0.01	**−0.14**	**−0.15**	−0.01	**−0.07**	**−0.17**	**−0.24**	**−0.11**	−0.01	**−0.39**	**−0.11**	1.00	
INSTMAJ (29)	**−0.13**	−0.01	−0.02	**0.13**	**0.24**	**−0.08**	0.02	**0.14**	0.00	0.00	**0.08**	0.00	0.01	−0.02	**0.12**	**−0.05**	**−0.04**	**0.08**	**0.08**	−0.01	0.00	**0.13**	**0.23**	**0.07**	**0.03**	**0.11**	0.01	**−0.17**	1.00

Bold correlations are significant at $p < 0.05$. See Appendix B for variable definitions.

Table 4
Regression of audit lag on tainted ESG reputation.

Dependent variable:		*AULAG*	
	Pred. Sign	**Coeff.**	**t-value**
Intercept		4.127***	103.29
BADREP	+	0.002***	2.68
SIZE	–	−0.064***	−27.13
LOSS	+	0.019***	2.96
ZSCORE	?	−0.002	−1.44
BUSEG	+	0.000	0.08
MERGER	+	0.009**	2.02
FOREIGN	+	0.006*	1.48
ROA	–	−0.030	−1.18
LEVERAGE	+	0.080***	7.17
M/B	–	−0.002***	−4.64
ISSUANCE	+	0.009*	1.40
AGE	–	−0.001	−0.82
ICWEAK	+	0.123***	8.75
MISST	+	0.028***	4.43
BIG4	–	−0.036***	−4.07
AUDTEN	?	−0.002	−0.72
GCM	+	0.098***	4.29
BUSY	+	0.008**	1.90
NASFEE	?	0.000	0.22
AUFEE	+	0.030***	8.31
Year FE		Included	
Industry FE		Included	
No. of Obs.		6,448	
Adjusted R^2		0.306	
F-value		65.10***	

Variable definitions are provided in Appendix B. *, **, *** denote significance at the 0.10, 0.05, and 0.01 levels, respectively, based on robust standard errors (Huber-White sandwich estimate of variances). Significance is based on p-values that are one-tailed for variables with a predicted sign, and two-tailed otherwise.

will indicate that any bias arising from unobserved variables correlating with tainted ESG reputation is not a concern (Lennox et al., 2011). I estimate a *BADREP* determinants model as shown in Eq. (4) below. The model includes industry- and year-fixed effects.

$$BADREP = f\{SIZE, LOSS, ZSCORE, BUSEG, MERGER, FOREIGN, LEVERAGE, AGE, MISST, BIG4, BMEET, INSIDE, INSTMAJ, ESG\_IND, MTR, MKTSHARE, LIT, INDUSTRYFE, YEAR\ \ FE\}. \quad (4)$$

The dependent variable, *BADREP*, and the independent variables, *SIZE*, *LOSS*, *ZSCORE*, *BUSEG*, *MERGER*, *FOREIGN*, *LEVERAGE*, *AGE*, *MISST*, *BIG4*, *BMEET*, *INSIDE*, and *INSTMAJ*, are as previously defined. The following additional variables serve as the instruments: whether the firm operates in ESG-sensitive industry (*ESG_IND*), marginal tax rate (*MTR*), market share (*MKTSHARE*), and whether the firm operates in a litigious industry (*LIT*). These instruments are not subsequently employed as controls in the tests for association between tainted ESG reputation and audit report lag or the likelihood of a restatement. I use the prior fiscal year values (lag) of all the independent variables, including the instruments. Table 7 presents the results of the analyses. Column 1 presents the first-stage OLS regression results for *BADREP*, and Column 2 presents the second-stage OLS regression results for *AULAG* (H1). Columns 3 and 4 present the second-stage logistic regression results for *REST* and *REST_CORE* (H2a). Finally, Columns 5 and 6 present the second-stage logistic regression results for *REST and REST_CORE* (H2b).

The results from the second-stage OLS regressions in Column 2 indicate a significant positive association between *BADREPPRE* and *AULAG* ($p < 0.01$).[23] The results from the second-stage logistic regressions in Columns 3 and 4 indicate significant negative associations between *BADREPPRE* and *REST* ($p < 0.05$) and between *BADREPPRE* and *REST_CORE* ($p < 0.05$), respectively. In Columns 5 and 6, the interaction term *BADREPPRE*AULAG* is negative and significantly associated with *REST* ($p < 0.05$) and *REST_CORE* ($p < 0.05$), respectively. Taken together, the findings from the two-stage analyses support the findings in the

[23] The first-stage OLS regression results in Column 1 indicate that firm size (*SIZE*) is the single largest determinant of *BADREP* (Coef. 0.817; $p < 0.01$). *BADREP* also positively relates to loss (*LOSS*), foreign operations (*FOREIGN*), company age (*AGE*), number of board meetings (*BMEET*), firms operating in ESG-sensitive industries (*ESG_IND*), higher market share (*MKTSHARE*), and firms operating in litigious industries (*LIT*). *BADREP* relates negatively to firms engaged in acquisitions (*MERGER*), firms with higher leverage (*LEVERAGE*), firms audited by a Big Four accounting firm (*BIG4*), higher insider ownership (*INSIDE*), and firms with higher marginal tax rate (*MTR*). As shown in the table, the instrumental variables are all significantly associated with *BADREP*.

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Table 5
Regression of financial restatement on tainted ESG reputation.

	Dependent variables:	Column 1 *REST*		Column 2 *REST_CORE*	
	Pred. Sign	Coeff.	z-value	Coeff.	z-value
Intercept		−2.918***	−3.18	−2.714*	−1.95
BADREP	–	−0.040***	−2.34	−0.077***	−2.82
SIZE	–	−0.064	−1.23	−0.135**	−1.79
LOSS	?	−0.035	−0.26	0.071	0.38
BUSEG	+	0.049	0.67	−0.156	−1.44
MERGER	+	−0.004	−0.04	0.083	0.56
FOREIGN	+	0.194**	2.19	0.251**	1.89
ROA	–	−0.004	−0.01	−0.050	−0.11
LEVERAGE	+	0.944***	4.96	0.534**	1.94
ICWEAK	+	1.405***	7.68	1.518***	7.31
MISST	+	1.677***	15.37	1.239***	8.23
BIG4	?	0.759***	3.84	0.717***	2.75
AUDTEN	–	−0.017	−0.30	−0.048	−0.60
GCM	?	0.594**	2.12	0.701**	1.99
AUFEE	–	−0.022	−0.28	−0.045	−0.39
RESTR	+	0.121*	1.38	0.015	0.11
SPECIALIST	–	−0.216***	−2.52	−0.241**	−1.86
BIND	–	−0.248	−0.89	−0.209	−0.51
BMEET	?	0.226*	1.93	0.424**	2.57
INSIDE	?	−0.087	−0.39	−1.182***	−3.43
INSTMAJ	–	−0.003	−0.04	−0.025	−0.20
Year FE		Included		Included	
Industry FE		Included		Included	
No. of Obs.		7,266		7,266	
Pseudo-R^2		0.111		0.108	
Wald		537.96***		337.61***	

Variable definitions are provided in Appendix B. *, **, *** denote significance at the 0.10, 0.05, and 0.01 levels, respectively, based on robust standard errors (Huber-White sandwich estimate of variances). Significance is based on p-values that are one-tailed for variables with a predicted sign, and two-tailed otherwise.

primary analyses by demonstrating that unobservable determinants of tainted ESG reputation are unlikely to have impacted those results.

4.3.2. The role of audit fees on the association between tainted ESG reputation and audit quality

A recent study, by Burke et al. (2019), finds a positive association between tainted ESG reputation and audit fees, suggesting that auditors increase fees in response to a tainted reputation. Studies indicate that using fees as a proxy for audit effort is noisy, because fees can capture risk premia, audit market effects, and low balling (e.g., Knechel and Payne 2001; Knechel et al. 2009; Knechel and Sharma, 2012); nonetheless, fees is associated with audit quality (DeFond and Zhang, 2014). Therefore the audit report lag effect of tainted ESG reputation observed in this study may not differ from the audit fee effect of tainted ESG reputation observed by Burke et al. (2019). Further, the negative association between tainted ESG reputation and poor audit quality observed in this study may be driven by audit fees and there may be no information in audit report lag beyond audit fees. I address these concerns in several ways.

First, the correlation between audit fees and audit report lag, as demonstrated in Table 3, is not high at −0.33, suggesting that fees and report lag capture different constructs.[24] Second, I control for fees in both the audit report lag and audit quality models, and the results of negative ESG (*BADREP*) are beyond the effect of audit fees. Finally, to demonstrate that the audit quality effect of tainted ESG reputation is mainly driven by report lag and not fees, I interact tainted ESG reputation with fees (*BADREP*AUFEE*), and examine how *BADREP*AUFEE* relates to *REST* and *REST_CORE*, both in the absence and presence of audit report lag. If audit fees capture the same audit effort as audit report lag, the coefficient on *BADREP*AUFEE* should be negative and significantly related to *REST* and *REST_CORE*. Further, if there is no information in audit report lag beyond audit fees, the coefficient on *BADREP*AUFEE* (*BADREP*AULAG*) should be significant and negatively (not significantly) related to *REST* and *REST_CORE*. I report the results in Table 8. As shown in Columns 1 and 3, *BADREP*AUFEE* is not significant in the *REST* and *REST_CORE* models, in the absence of *BADREP*AULAG*, suggesting that the negative association between tainted ESG reputation and poor audit quality is not driven by fees. From Columns 2 and 4, the interaction term, *AULAG*BADREP* continues to be negative and significantly related to *REST* (Column 2) and *REST_CORE* (Column 4), while *BADREP*AUFEE* is not significant. Collectively, these results suggest that the audit quality effect of tainted ESG reputation is driven by auditors expending greater effort and not by

[24] The negative correlation between log of audit fees and log of audit report lag is consistent with the findings of Greiner et al. (2016). Some studies report positive correlation between audit fees scaled by total assets and log of audit report lag. The correlation between audit fees and audit report lag is 0.33 when I scale audit fees by total assets.

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Table 6
Regression of financial restatement on tainted ESG reputation conditional on audit lag.

	Dependent variables:	Column 1 *REST*		Column 2 *REST_CORE*	
	Pred. Sign	**Coeff.**	**z-value**	**Coeff.**	**z-value**
Intercept		−3.308***	−3.33	−3.309**	−2.11
BADREPπ	–	−0.034**	−1.74	−0.085***	−2.57
AULAGπ	?	0.032	0.11	−0.904**	−2.23
*BADREP*AULAGπ*	–	−0.204**	−2.11	−0.355***	−2.56
SIZE	–	−0.131**	−2.19	−0.270***	−2.96
LOSS	?	−0.045	−0.30	0.070	0.33
BUSEG	+	−0.008	−0.10	−0.190	−1.60
MERGER	+	−0.062	−0.62	0.097	0.59
FOREIGN	+	0.223***	2.34	0.333**	2.27
ROA	–	−0.129	−0.26	−0.508	−0.89
LEVERAGE	+	1.085***	5.23	0.678**	2.18
ICWEAK	+	1.415***	6.90	1.552***	6.49
MISST	+	1.711***	14.62	1.226***	7.33
BIG4	?	0.811***	3.74	0.917***	2.89
AUDTEN	–	−0.017	−0.28	−0.015	−0.17
GCM	?	0.000	0.00	0.271	0.52
RESTR	+	0.027	0.32	0.047	0.36
AUFEE	–	0.119	1.26	0.039	0.26
SPECIALIST	–	−0.250***	−2.72	−0.278**	−1.96
BIND	–	−0.218	−0.75	−0.396	−0.93
BMEET	?	0.236*	1.86	0.363**	1.97
INSIDE	?	−0.159	−0.66	−1.091***	−2.91
INSTMAJ	–	−0.047	−0.50	−0.116	−0.84
Year FE		Included		Included	
Industry FE		Included		Included	
No. of Obs.		6,448		6,448	
Pseudo-R^2		0.114		0.108	
Wald		499.88***		287.68***	
*BADREP + BADREP*AULAG*		−0.239**	(7.94)	−0.441***	(16.06)

π -These variables are mean-centered to avoid multicollinearity (Aiken et al., 1991). Variable definitions are provided in Appendix B. *, **, *** denote significance at the 0.10, 0.05, and 0.01 levels, respectively, based on robust standard errors (Huber-White sandwich estimate of variances). Significance is based on p-values that are one-tailed for variables with a predicted sign, and two-tailed otherwise.

increasing audit fees. The findings extend those of Burke et al. (2019) by demonstrating that tainted ESG reputation reduces poor audit quality through increased audit report lag.

4.3.3. Tainted ESG reputation and future audit effort and future audit quality

I perform three additional analyses (a total of 10 regressions) to provide further insights on the effects of tainted ESG reputation on audit report lag and likelihood of restatement up to two (i.e. year *t + 1*) and three years (i.e. year *t + 2*) into the future. The first test examines how tainted ESG reputation in year *t* relates to audit report lag in year *t + 1* (*AULAG_T2*) and year *t + 2* (*AULAG_T3*). The next test examines how tainted ESG reputation in year *t* relates to audit quality in year *t + 1* (*REST_T2* or *REST_CORE_T2*) and year *t + 2* (*REST_T3* or *REST_CORE_T3*). The final test examines how audit quality in year *t + 1* (*REST_T2* or *REST_CORE_T2*) and year *t + 2* (*REST_T3* or *REST_CORE_T3*) is a function of audit effort. I report the results in Table 9. Panels A, B, and C report results for H1, H2a, and H2b, respectively. In Panel A, the results in Columns 1 and 2 indicate a positive and significant association between *BADREP* and *AULAG_T2* ($p < 0.01$) and between *BADREP* and AULAG_T3 ($p < 0.01$), respectively, suggesting that tainted ESG reputation in year *t* is positively associated with increased audit effort in years *t + 1* and *t* + 2. In Panel B, Columns 1 and 2 report results for the likelihood of restatement in years *t + 1* and *t* + 2, respectively, and Columns 3 and 4 report results for the likelihood of restatement affecting core earnings in years *t + 1* and *t + 2*, respectively. The results in Columns 1 and 2 indicate a negative and significant association between *BADREP* and *REST_T2* (*REST_T3*) ($p < 0.01$), and the results in Columns 3 and 4 indicate a negative and significant association between *BADREP* and *REST_CORE_T2* (*REST_CORE_T3*) ($p < 0.01$). These results suggest that tainted ESG reputation is negatively associated with likelihood of restatement and with likelihood of restatement affecting core earnings in years *t + 1* and year *t + 2*. Finally, in Panel C (Columns 1, 2, and 3), the results on the interaction variable *BADREP*AULAG* are negative and significant across *REST_T2*, *REST_T3*, and *REST_CORE_T2* ($p < 0.05$, 0.1, and 0.05, respectively).[25] Collectively, these results suggest that tainted ESG reputation in year *t* encourages auditors to expend more effort to audit the financial statements in years *t + 1*

[25] In Panel C of table 9, the variable *BADREP*AULAG* captures the interaction of *BADREP* and *AULAG_T2*, *BADREP* and *AULAG_T3*, *BADREP* and *AULAG_T2*, and *BADREP* and *AULAG_T3* in Columns 1, 2, 3 and 4, respectively.

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Table 7
Two-stage analysis.

Dependent variables:	**Column 1** *BADREP*		**Column 2** *AULAG*		**Column 3** *REST*		**Column 4** *REST_CORE*		**Column 5** *REST*		**Column 6** *REST_CORE*	
	Coeff.	**t-value**	**Coeff.**	**t-value**	**Coeff.**	**z-value**	**Coeff.**	**z-value**	**Coeff.**	**z-value**	**Coeff.**	**z-value**
Intercept	−4.074***	−13.46	4.163***	74.61	−4.184***	−3.51	−4.615**	−2.49	−4.474***	−3.00	−5.754**	−2.28
BADREPPREπ			0.014***	2.59	−0.306**	−2.13	−0.487**	−2.09	−0.216*	−1.38	−0.479**	−1.70
AULAGπ									−0.233	−0.85	−1.288***	−3.37
*BADREPPRE*AULAGπ*									−0.392**	−2.08	−0.684**	−2.20
SIZE	0.817***	30.71	−0.074***	−17.22	0.129	1.10	0.163	0.91	0.008	0.06	0.041	0.19
LOSS	0.279***	3.21	0.015**	2.17	−0.023	−0.17	0.078	0.42	−0.026	−0.18	0.081	0.38
ZSCORE	0.018	0.78	−0.002	−1.20								
BUSEG	−0.073	−1.46	0.001	0.28	0.044	0.61	−0.155	−1.44	−0.004	−0.06	−0.189	−1.60
MERGER	−0.384***	−6.20	0.014***	2.81	−0.028	−0.30	0.056	0.38	−0.071	−0.70	0.060	0.36
FOREIGN	0.155***	2.40	0.005	1.16	0.197**	2.23	0.231**	1.82	0.236***	2.59	0.325***	2.35
ROA			−0.025	−0.99	−0.100	−0.24	−0.196	−0.41	−0.127	−0.25	−0.453	−0.72
LEVERAGE	−1.286***	−7.79	0.095***	7.59	0.951***	5.00	0.561**	2.02	1.096***	5.32	0.646**	2.04
M/B			−0.002***	−4.79								
ISSUANCE			0.010*	1.45								
AGE	0.077***	3.52	−0.002	−1.39								
ICWEAK			0.124***	8.83	1.390***	7.66	1.485***	7.38	1.390***	6.68	1.426***	5.83
MISST	0.060	0.64	0.027***	4.31	1.657***	15.13	1.202***	7.98	1.694***	14.44	1.159***	6.90
BIG4	−0.321***	−3.13	−0.031***	−3.46	0.789***	3.97	0.765***	2.95	0.863***	3.94	1.073***	3.30
AUDTEN			−0.001	−0.54	−0.011	−0.20	−0.034	−0.42	−0.011	−0.18	−0.002	−0.02
GCM			0.100***	4.35	0.598**	2.14	0.684**	1.94	−0.019	−0.04	0.333	0.60
BUSY			0.007*	1.74								
NASFEE			0.000	0.10								
AUFEE			0.029***	8.12	−0.032	−0.41	−0.065	−0.57	0.012	0.14	−0.001	−0.01
RESTR					0.130	1.48	0.030	0.22	0.127	1.36	0.061	0.40
SPECIALIST					−0.229***	−2.67	−0.259**	−2.01	−0.258***	−2.80	−0.293**	−2.06
BIND					0.009	0.03	0.202	0.45	−0.044	−0.14	0.119	0.25
BMEET	0.165*	1.93			0.208*	1.78	0.396**	2.40	0.227*	1.79	0.341	1.85
INSIDE	0.755***	−5.31			−0.057	−0.25	−1.108***	−3.24	−0.139	−0.58	−1.127***	−2.96
INSTMAJ	0.057	0.93			−0.005	−0.06	−0.030	−0.24	−0.049	−0.53	−0.122	−0.89
ESG_IND	0.386***	4.00										
MTR	−2.528***	−6.12										
MKTSHARE	12.504***	9.92										
LIT	0.421***	4.73										
Year & industry	Included		Included		Included		Included		Included		Included	
Adjusted/ Pseudo R^2	0.287		0.306		0.111		0.106		0.115		0.109	
F-value/Wald	85.94***		60.96***		536.14***		341.46***		492.36***		276.65***	

π –In columns 4 and 6 these variables are mean-centered to avoid multicollinearity (Aiken et al., 1991). Variable definitions are provided in Appendix B. *, **, *** denote significance at the 0.10, 0.05, and 0.01 levels, respectively, based on robust standard errors (Huber-White sandwich estimate of variances). Significance is based on p-values that are one-tailed for variables with a predicted sign, and two-tailed otherwise.

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Table 8
Regression of financial restatement on tainted ESG reputation conditional on audit fees and audit lag.

		Column 1		Column 2		Column 3		Column 4	
Dependent variables:		*REST*		*REST*		*REST_CORE*		*REST_CORE*	
	Pred. Sign	**Coeff.**	**z-value**	**Coeff.**	**z-value**	**Coeff.**	**z-value**	**Coeff.**	**z-value**
Intercept		−3.277***	−5.97	−2.946***	−4.86	−3.449***	−4.39	−2.673***	−3.02
BADREPπ	–	−0.028	−1.38	−0.018	−0.83	−0.060	−1.95	−0.067**	−1.94
AUFEEπ	?	−0.002	−0.03	0.057	0.65	−0.021	−0.18	0.080	0.63
AULAGπ	?			0.085	0.29			−0.850**	−2.08
*BADREP*AUFEEπ*	–	−0.016	−1.05	−0.031	−1.18	−0.027	−1.24	−0.031	−1.23
*BADREP*AULAGπ*	–			−0.234**	−2.32			−0.390***	−2.56
Controls, year & industry		Included		Included		Included		Included	
No. of Obs.		7,266		6,448		7,266		6,448	
Pseudo R^2 (Wald)		0.111 (538.35***)		0.115 (499.21***)		0.108 (334.79***)		0.109 (284.15***)	

π –These variables are mean-centered to avoid multicollinearity (Aiken et al., 1991). Variable definitions are provided in Appendix B. *, **, *** denote significance at the 0.10, 0.05, and 0.01 levels, respectively, based on robust standard errors (Huber-White sandwich estimate of variances). Significance is based on p-values that are one-tailed for variables with a predicted sign, and two-tailed otherwise.

Table 9
Future audit effort and audit quality.

Panel A: Regression of future audit lag on tainted ESG reputation

	Column 1		Column 2	
Dependent variables:	*AULAG_T2*		*AULAG_T3*	
	Coeff.	**t-value**	**Coeff.**	**t-value**
Intercept	4.149***	94.40	4.196***	87.33
BADREP	0.002***	2.47	0.002***	2.43
Controls, year & industry	Included		Included	
Adjusted R^2 (F-value)	0.279 (49.63***)		0.266 (41.56***)	

Panel B: Regression of future restatement on tainted ESG reputation

	Column 1		Column 2		Column 3		Column 4	
Dependent variables:	*REST_T2*		*REST_T3*		*REST_CORE_T2*		*REST_CORE_T3*	
	Coeff.	**z-value**	**Coeff.**	**z-value**	**Coeff.**	**z-value**	**Coeff.**	**z-value**
Intercept	−3.250***	−7.14	−2.888***	−6.25	−3.335***	−4.84	−3.463***	−4.62
BADREP	−0.041***	−2.45	−0.045***	−2.70	−0.073***	−2.62	−0.080***	−2.68
Controls, year & industry	Included		Included		Included		Included	
Pseudo R^2 (Wald)	0.065 (282.73***)		0.061 (256.13***)		0.067 (167.01***)		0.074 (173.62***)	

Panel C: Regression of future restatement on tainted ESG reputation conditional on future audit lag

	Column 1		Column 2		Column 3		Column 4	
Dependent variables:	*REST_T2*		*REST_T3*		*REST_CORE_T2*		*REST_CORE_T3*	
	Coeff.	**z-value**	**Coeff.**	**z-value**	**Coeff.**	**z-value**	**Coeff.**	**z-value**
Intercept	−3.419***	−6.77	−2.928***	−5.73	−3.579***	−4.59	−3.485***	−4.20
*BADREP*AULAGπ*	−0.178**	−1.79	−0.149*	−1.54	−0.244**	−1.87	−0.191	−1.06
Main effect, controls, year & industry	Included		Included		Included		Included	
Pseudo R^2 (Wald)	0.074 (284.88***)		0.072 (267.23***)		0.077 (163.37***)		0.087 (165.10***)	

π –This variable and main effect variables are mean-centered to avoid multicollinearity (Aiken et al., 1991). Variable definitions are provided in Appendix B. *, **, *** denote significance at the 0.10, 0.05, and 0.01 levels, respectively, based on robust standard errors (Huber-White sandwich estimate of variances). Significance is based on p-values that are one-tailed for variables with a predicted sign, and two-tailed otherwise.

and *t + 2*; this increased audit effort reduces the likelihood that the audited financial statements in years *t + 1* and *t + 2* will be restated.

4.3.4. Tainted ESG reputation components

The RepRisk AG database indicates whether the RRI score has environmental, social, or governance mentions. I examine how each of these components drives the results in the primary analyses. This analysis can inform auditors, policymakers, COSO, and other stakeholders about the components of tainted ESG reputation that auditors pay attention (do not pay attention) to. Unlike a firm's current and peak RRI scores, which are issued relative to peers' scores, the percentage score for each component only reflects the number of links/mentions of that component in proportion to the total number of links/mentions in the current RRI.[26] For example, according to RepRisk, a higher percentage of environmental links for a firm does not

[26] RepRisk does not provide the number of environmental, social, and governance links in proportion to the total number of links that make up the peak RRI.

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suggest a worse environmental risk exposure, relative to peers; it only suggests the composition of news for the firm. Therefore, to compute a firm's tainted peak environmental reputation (*BADREPe*) relative to peers, I multiply the firm's average environmental percentage for the fiscal year by its peak RRI. I similarly compute the firm's tainted social (*BADREPs*) and governance (*BADREPg*) reputations. I adjust *BADREPe*, *BADREPs*, and *BADREPg* by the yearly mean (similar to the adjustment of *BADREP* discussed previously).

In untabulated results, the minimum (maximum) unadjusted *BADREPe*, *BADREPs*, and *BADREPg* are 0.00 (44.50), 0.00 (60.00), and 0.00 (54.44), respectively. ANOVA tests by year indicate significant ($p < 0.01$) differences in the mean of all three components. To examine how each of the three tainted ESG reputation components (*BADREPe*, *BADREPs*, and *BADREPg*) relates to audit effort, I reperform the regressions for Eq. (1) and report the results in Panel A, Table 10.[27] From the table, the coefficients on *BADREPe* and *BADREPg* are positive and significantly ($p < 0.01$ and 0.05, respectively) associated with audit report lag, but the coefficient on *BADREPs* is not. To examine the association between each of the components and the likelihood of a restatement, I reperform the regressions for Eqs. (2) and (3) and report the results in Panel B, Table 10. I report the results of Eq. (2) for *REST* and *REST_CORE* in Columns 1 and 3, respectively. These results are especially interesting: *BADREPe* and *BADREPg* are individually negative and significantly ($p < 0.05$) associated with both *REST* and *REST_CORE*, but *BADREPs* is positive and significantly ($p < 0.05$) associated with *REST_CORE*. To examine how audit report lag, in response to each of the three components, translates to audit quality, I create three new interaction variables: *BADREPe*AULAG*, *BADREPs*AULAG*, and *BADREPg*AULAG*. I re-estimate the regressions for Eq. (3) and report the results in Panel B of Table 10 (Column 2 for *REST* and Column 4 for *REST_CORE*). From Column 2, the coefficients on the interaction variables *BADREPe*AULAG* and *BADREPg*AULAG* are negative and significantly ($p < 0.05$) associated with *REST*. Similarly, from Column 4, the coefficients on *BADREPe*AULAG* and *BADREPg*AULAG* are negative and significantly ($p < 0.01$ and 0.05, respectively) associated with *REST_CORE*. The interaction term, *BADREPs*AULAG*, is not significant in the *REST* (Column 2) and *REST_CORE* (Column 4) models.

Taken together, the results of the component analyses suggest two important takeaways. First, auditors seem to pay more attention to and exert additional audit effort for firms whose tainted ESG reputations relate to environmental and governance issues; this increased effort decreases the likelihood of a restatement. Second, auditors do not increase audit effort if the firm's tainted ESG reputation relates to social issues. In fact, tainted ESG reputation related to social issues *increases* the likelihood of a restatement affecting core earnings.

4.3.5. Excluding corporate governance control variables from the restatement models

The restatement models in the main analyses, which I adopt from the literature, control for corporate governance variables, such as board independence, board meetings, insider ownership percentage, and institutional majority. From Appendix A, these governance control variables do not directly impact the 28 predefined ESG-related variables that were used to calculate *BADREP*. However, the governance control variables may indirectly impact *BADREP* in general and *BADREPg* in particular.[28] Therefore I exclude them and re-estimate all regressions in the main analyses to determine whether the results are robust. In all empirical analyses (untabulated), my earlier findings persist.

4.3.6. Alternative variable measurement

In this section, I consider alternative measures of tainted ESG reputation and audit quality for robustness. First, in the main analyses, I measured tainted ESG reputation using peak RRI. Because peak RRI reflects the highest level of RRI for the trailing 24 months, the peak RRI at the end of the current fiscal year could pertain to an ESG event that occurred in a previous fiscal year. To address this possibility, I examine the sensitivity of the results to ESG events occurring during the current fiscal year. As indicated in Section 3.2, RepRisk provides current RRI for a firm each month. Therefore I create a new variable, *BADREP_CUR*, which equals total current RRI for the fiscal year divided by 12. I adjust *BADREP_CUR* by the yearly mean and reperform the regressions in the main analyses for the above modification. In all the analyses (untabulated), the results in the main analyses persist.

Second, the main analysis employed the likelihood of restatement as proxy for poor audit quality. As discussed previously, restatement is an appropriate measure of output-based audit quality. However, some studies use accruals quality instead. They base this choice on the idea that good audits should limit opportunistic earnings management, so higher audit quality is consistent with higher earnings quality. (See a review of the literature by DeFond and Zhang, 2014.) To ensure the robustness of my audit quality findings, I replace the restatement measures *REST* and *REST_CORE* with a discretionary accruals measure, *AB_DACC*, which is the absolute value of performance-matched total discretionary accruals. I re-estimate Eqs. (2) and (3) to examine whether and how tainted ESG reputation is associated with opportunistic earnings management and whether and how higher audit effort (proxied by audit report lag) moderates this relationship. The *AB_DACC* model controls for *SIZE*, *LOSS*, *LEVERAGE*, *M/B*, *BIG4*, *MERGER*, and *LIT*. These variables are as previously defined. Additional control variables are operating cash flows (*CFO*) and lag discretionary accruals (*L/ACCRUAL*). I report the results in Table 11. From Column 1 of Table 11,

[27] The highest level of correlation among *BADREPe*, *BADREPs*, and *BADREPg* is 0.49. This is well below the 0.80 threshold beyond which multicollinearity may be a concern (Kennedy, 2008). Column 1 of Table 9, Panel A, reports results when all three components of tainted ESG reputation (*BADREPe*, *BADREPs*, and *BADREPg*) are together in a regression. As a precaution, I estimate separate regressions for each of these variables. I report the results for *BADREPe*, *BADREPs*, and *BADREPg* in Columns 2, 3, and 4, respectively.

[28] For example, from the first-stage of the two-stage model, the number of board meetings and insider ownership percentage are significantly associated with *BADREP*.

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Table 10
Components of tainted ESG reputation.

Panel A: Regression of audit lag on components of tainted ESG reputation

	Dependent variables:	**Column 1** *AULAG*		**Column 2** *AULAG*		**Column 3** *AULAG*		**Column 4** *AULAG*	
	Pred. Sign	**Coeff.**	**t-value**	**Coeff.**	**t-value**	**Coeff.**	**t-value**	**Coeff.**	**t-value**
Intercept		4.138***	101.55	4.136***	104.80	4.114***	103.20	4.116***	105.38
BADREPe	+/−/−	0.003***	4.15	0.003***	4.07				
BADREPs	+/−/−	−0.001	−0.69			0.000	0.23		
BADREPg	+/−/−	0.001**	1.71					0.001**	2.09
Controls, year & industry		Included		Included		Included		Included	
No. of Obs.		6,448		6,448		6,448		6,448	
Adjusted R^2 (F-value)		0.308 (62.00***)		0.307 (65.02***)		0.291 (64.94***)		0.306 (65.16***)	

Panel B: Regression of financial restatement on components of tainted ESG reputation

	Dependent variables:	**Column 1** *REST*		**Column 2** *REST*		**Column 3** *REST_CORE*		**Column 4** *REST_CORE*	
	Pred. Sign	**Coeff.**	**z-value**	**Coeff.**	**z-value**	**Coeff.**	**z-value**	**Coeff.**	**z-value**
Intercept		−3.099***	−6.71	−3.225***	−6.25	−3.409***	−5.03	−3.308***	−4.33
BADREPe	−/−/−/−	−0.031**	−2.21	0.018	0.78	−0.051**	−2.28	−0.094***	−2.43
BADREPs	−/−/−/−	−0.006	−0.56	−0.034	−1.21	0.028**	1.81	0.001	0.03
BADREPg	−/−/−/−	−0.035**	−2.29	−0.016	−0.84	−0.037**	−2.15	−0.070**	−1.87
AULAGπ	?			−0.155	−0.56			0.071	0.15
*BADREPe*AULAGπ*	−/−			−0.250**	−1.69			−0.611***	−2.69
*BADREPs*AULAGπ*	−/−			0.135	0.83			0.320	1.40
*BADREPg*AULAGπ*	−/−			−0.236**	2.18			−0.213**	−2.00
Controls, year & industry		Included		Included		Included		Included	
No. of Obs.		7,266		6,448		7,266		6,448	
Pseudo R^2 (Wald)		0.112 (526.25***)		0.116 (497.12***)		0.106 (338.42***)		0.108 (292.70***)	

π –These variables are mean-centered to avoid multicollinearity (Aiken et al., 1991). Variable definitions are provided in Appendix B. *, **, *** denote significance at the 0.10, 0.05, and 0.01 levels, respectively, based on robust standard errors (Huber-White sandwich estimate of variances). Significance is based on p-values that are one-tailed for variables with a predicted sign, and two-tailed otherwise.

Table 11
Earnings quality as proxy for audit quality.

	Dependent variables:	**Column 1** *AB_DACC*		**Column 2** *AB_DACC*	
	Pred. Sign	**Coeff.**	**t-value**	**Coeff.**	**t-value**
Intercept	?	0.081***	16.67	0.080***	14.19
BADREPπ	–	0.000**	−1.74	−0.001**	−2.14
AULAGπ	?			−0.003	−0.65
*BADREP*AULAGπ*	–			−0.004**	−2.10
SIZE	?	−0.004***	−6.81	−0.004***	−5.89
LOSS	+	0.025***	10.23	0.027***	9.73
LEVERAGE	?	−0.021***	−5.58	−0.018***	−4.40
M/B	+	0.002***	6.47	0.002***	5.73
BIG4	–	−0.001	−0.49	−0.003	−1.10
MERGER	?	0.000	−0.31	0.000	−0.13
LIT	+	0.006***	2.88	0.006***	2.47
CFO	?	0.122***	7.42	0.144***	8.10
L|ACCRUAL	+	4.480**	1.72	3.299	1.01
Year FE		Included		Included	
Industry FE		Included		Included	
No. of Obs.		5,865		5,865	
Adjusted-R^2		0.182		0.192	
F-value		46.78***		39.75***	

π – In Column 2 these variables are mean-centered to avoid multicollinearity (Aiken et al., 1991). Variable definitions are provided in Appendix B. *, **, *** denote significance at the 0.10, 0.05, and 0.01 levels, respectively, based on robust standard errors (Huber-White sandwich estimate of variances). Significance is based on p-values that are one-tailed for variables with a predicted sign, and two-tailed otherwise.

BADREP is negative and significantly ($p < 0.05$) associated with *AB_DACC*. Similarly, from Column 2, the coefficient on the interaction term, *BADREP*AULAG*, is negative and significantly ($p < 0.05$) associated with *AB_DACC*. The results suggest that tainted ESG reputation reduces accruals-based earnings management and that greater audit effort in response to tainted ESG reputation deters opportunistic earnings management.

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4.3.7. Controlling for audit committee variables in the likelihood of restatement models

The audit committee helps ensure higher audit quality. Prior evidence suggests that audit committee characteristics, such as size, accounting expertise, and meeting frequency, are associated with audit quality (need references here). In the primary analyses, these audit committee variables were excluded from the restatement models, to confine the control variables to those included in the referenced literature and also due to data attrition. To ensure that the results in the primary analyses are robust to controlling for audit committee characteristics, I include audit committee size (*AC_SIZE*), accounting expertise (*AC_EXPRT*), and meeting frequency (*AC_MEET*) in the restatement models and re-estimate Eqs. (2) and (3). The untabulated results suggest that my primary results are unaffected when audit committee quality variables are included in the restatement models.

5. Conclusion

The risks that ESG-related crises may emerge and harm firm value, performance, and sustainability is a leading concern for investors (Bernow et al., 2017; COSO, 2018). In the United States, numerous firms have suffered the ramifications of ESG risks in recent years. Because ESG issues are central to investment decisions, investors have called for firm disclosure of ESG factors. In 2016, the SEC invited public comments on a proposal to require ESG disclosures in financial statements. However, an updated 2017 SEC proposal on nonfinancial disclosures did not address ESG issues. As a result, ESG disclosures remain voluntary in the United States. Similarly, regulators of auditors in the United States have not formally incorporated ESG factors into auditing standards; traditional audit risk assessment models offer no guidance on how these risks translate to a higher risk of material misstatements (Sharma et al. 2018). In the absence of mandatory disclosure, the media disseminates information about companies' ESG issues, and the intensity and reach of media criticism can influence investor assessment of ESG risks. Kölbel et al. (2017) demonstrate that the intensity of media criticism of a company's ESG issues can heighten investor assessment of the related financial risks. My study offers insights on how auditors address media criticism of their clients' ESG practices, given that ESG issues matter to investors.

The analyses suggest that overall auditors increase audit effort by spending more days auditing financial statements in response to tainted ESG reputations. At a minimum, auditors increase their effort for risky clients up to three years after an initial negative ESG report. At the component level, the analyses suggest that auditors spend more days auditing financial statements when the tainted ESG reputation relates to environmental and governance issues than they do when it relates to social issues. Further, the results suggest that, because auditors apply greater effort, the financial statements of such firms are less likely to be restated. The results also suggest that audit report lag better captures audit effort than audit fees when examining how auditors' response to tainted ESG reputation relates to audit quality. Also, this study demonstrates that firms whose ESG reputations are tainted, due to environmental or governance factors, are less likely to experience poor audit quality because auditors respond more to these ESG risks than to social ESG risks.

The policy and practice implications of this study center on how auditors deal with clients' ESG risks, absent mandatory disclosures of these risks. My finding that auditors generally do so by increasing audit effort (which translates to higher audit quality) should be good news to investors and ESG advocacy groups. However, my finding that, at the component level, a bad social reputation increases the likelihood of a restatement affecting core earnings constitutes bad news—and suggests a possible need for regulation. Specifically, the SEC may need to mandate that issuers disclose ESG factors in financial statements, and the PCAOB and the AICPA may need to update auditing risk assessment standards to incorporate all components of ESG risk.

This study also makes two important contributions to the literature on corporate reputation and audit quality. First, the findings on audit effort complement those of Burke et al. (2019), Sharma et al. (2018), and LópezPuertas-Lamy et al. (2017), who document an association between ESG issues and audit fees. The findings here suggest that the associations reported by these studies could be due to additional audit effort. Second, my findings extend literature by demonstrating that firms with bad reputations experience higher audit quality because auditors work harder on their financial statements. This is new to the corporate reputation literature, as Cao et al. (2012) suggest that only highly reputable firms (not firms with bad reputations) experience higher audit quality.

The results in this study should be considered with three caveats in mind. First, RepRisk's ESG reputation data is new, and the results depend on the reliability of RepRisk's ESG reputation score methodology and algorithm. Second, this study does not examine the effects of tainted ESG reputation on the credibility of quarterly financial statements, because quarterly statements are not audited. Future studies could examine whether tainted ESG reputation affects the integrity of these statements, which investors use in making investment decisions. Finally, this study does not consider the effectiveness of management's response to tainted ESG reputation. Future studies could also explore this issue.

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Declaration of Competing Interest

None.

Appendix A. RepRisk's 28 ESG issues coverage

ENVIRONMENT	SOCIAL		GOVERNANCE
Environmental Footprint	Community Relations	Employee Relations	Corporate Governance
Global pollution (incl. climate change and GHG emissions)	Human rights abuses, corporate complicity	Forced labor	Corruption, bribery, extortion, money laundering
Local pollution	Impacts on communities	Child labor	Executive compensation issues
Impacts on ecosystems and landscapes	Local participation issues	Freedom of association and collective bargaining	Misleading communication, e.g. "greenwashing"
Overuse and wasting of resources	Social discrimination	Discrimination in employment	Fraud
Waste issues		Occupational health and safety issues	Tax evasion
Animal mistreatment		Poor employment conditions	Tax optimization
			Anti-competitive practices
Cross-cutting Issues			
Controversial products and services			
Products (health and environmental issues)			
Violation of international standards			
Violation of national legislation			
Supply chain issues			

Appendix B. Definition of variables

Panel A: *Dependent variables used in main analyses*	
Variable	**Measurement (Data Source)**
AULAG	= Log of the difference in days between a firms' financial year-end date and the signature date of the audit report (Audit Analytics);
REST	= One if the current fiscal year financial statements are subsequently restated and if the restatement has negative consequences on reported earnings, and 0 otherwise (Audit Analytics);
REST_CORE	= One if the current fiscal year financial statements are subsequently restated and if the restatement has negative consequences on previously reported core earnings, and 0 otherwise (Audit Analytics).
Panel B: *Test variables used in main analyses*	
AULAG_T2 (*AULAG_T2*)	= Log of the difference in days between a firms' financial year-end date and the signature date of the audit report for fiscal year $t + 1$ ($t + 2$) (Audit Analytics);
REST_T2 (*REST_T3*)	= One if fiscal year $t + 1$ ($t + 2$) financial statements are subsequently restated and if the restatement has negative consequences on reported earnings, and 0 otherwise (Audit Analytics);

(*continued on next page*)

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REST_CORE_T2 (*REST_CORE_T3*) = One if fiscal year $t + 1$ ($t + 2$) financial statements are subsequently restated and if the restatement has negative consequences on previously reported core earnings, and 0 otherwise (Audit Analytics);
AB_DACC = Absolute value of performance-matched total discretionary accruals (Compustat).

Panel C: *Test variables used in main analyses*
BADREP = A firm's peak ESG reputation risk score (peak RRI) as at end of the fiscal year. Peak ESG RRI reflects highest level of RRI for the trailing 24 months (RepRisk);
*BADREP*AULAG* Mean-centered *BADREP* multiplied by mean-centered *AULAG*.

Panel D: *Test variables used in supplementary analyses*
BADREPPRE = Predicted value of *BADREP* estimated from the first-stage regression of *BADREP* on a set of determinants as denoted by Eq. (4) in the text;
*BADREP*AUFEE* Mean-centered *BADREP* multiplied by mean-centered log of audit fees;
BADREPe = Granular measure of a firm's peak environmental reputation risk score (RepRisk);
BADREPs = Granular measure of a firm's peak social reputation risk score (RepRisk);
BADREPg = Granular measure of a firm's peak governance reputation risk score (RepRisk);
BADREP_CUR A firm's total current RRI for the fiscal year divided by 12 (RepRisk).

Panel E: *Control variables used in main analyses*
SIZE = Log of total assets (Compustat);
LOSS = One if the firm reports net income below zero in the fiscal year, and zero otherwise (Compustat);
ZSCORE = Probability of bankruptcy estimated using the Altman's (1980) z-score prediction model for nonfinancial firms (Compustat);
BUSEG = Log of the sum of the number of business segments (Compustat);
MERGER = One if the firm reports merger or acquisition, and zero otherwise (Compustat);
FOREIGN = One if the firm has foreign operations, and zero otherwise (Compustat);
ROA = Net income divided by total assets (Compustat);
LEVERAGE = Total debt divided by market value of assets (Compustat);
M/B = Market-to-book (Compustat);
ISSUANCE = One if the firm issued new debt during the year, and zero otherwise. Identified as firms with a current year's total debt greater than 105% of the prior year's total debt (Compustat);
AGE = Log of company age (GMI Ratings);
ICWEAK = One if the firm reported material weakness in internal controls, and zero otherwise (Audit Analytics);
MISST = One if the firm restates previously issued financial statements in the current fiscal year, and zero otherwise (Audit Analytics);
BIG4 = One if the client's external auditor is a Big 4 auditor, and zero otherwise (Audit Analytics);
AUDTEN = Log of number of years the external auditor has audited the client (Audit Analytics);
GCM One if the firm received a modified going-concern opinion, and zero otherwise (Audit Analytics);
BUSY = One if the client's fiscal year end is in the month of December, and zero otherwise (Audit Analytics);
NASFEE = Log of total non-audit service fees (Audit Analytics);
AUFEE = Log of total audit fees (Audit Analytics);
RESTR = One if the firm has undergone restructuring activities, and zero otherwise (Compustat);
SPECIALIST = One if the company is audited by an industry specialist auditor, where an industry specialist is an auditor with 50 percent or more market share, based on audit fees, measured at the office level and two-digit SIC (Audit Analytics);
BIND = The percentage of directors on the firm's board who are independent (BoardEx);
BMEET = Log of the number of board meetings in person (Risk Metrics, GMI Ratings);
INSIDE = Percentage of outstanding shares held by top management (GMI Ratings);
ISTMAJ = One if a majority of outstanding shares are held by institutions, and zero otherwise (GMI Ratings);
YEAR FE = Year fixed effects;
INDUSTRY FE = Fama-French 12 industry indicators (https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/Data_Library/det_12_ind_port.html).

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Panel F: *Additional control variables used as instruments in first-stage of two-stage regressions and supplementary analyses*

ESG_IND	= One if the firm operates in ESG sensitive industry (two-digit SICs 10; 13; 21; 26; 28; 29; 33; 34; 49; and 51), and zero otherwise. See Brammer and Millington (2005) and Cho and Patten (2007);
MTR	= Simulated marginal tax rate provided by Professor John Graham, available at https://faculty.fuqua.duke.edu/~jgraham/taxform.html;
MKTSHARE	= Net sales divided by the sum of net sales in the three-digit SIC code industry, following Zang (2012);
LIT	= One if the firm operates in litigious industry (four-digit SICs 2833–2836; 3570–3577; 3600–3674; 5200–6951; 7370), and zero otherwise (Compustat);
CFO	= Operating cash flows scaled by total assets;
L/ACCRUAL	= Prior year discretionary accruals (Compustat);
AC_SIZE	= Log of the number of directors on a firm's audit committee (BOARDEX);
AC_EXPRT	= The percentage of directors on the firm's audit committee who are accounting experts (BOARDEX);
AC_MEET	= Log of the number of audit committee meetings in person during the year (GMI Ratings).

Appendix C. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jaccpubpol.2019.106713.

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