
CSR PERFORMANCE AND FINANCIAL PERFORMANCE: THE MODERATING ROLE OF CSR DISCLOSURE QUALITY

HOW VARIOUS ASPECTS OF AUDITING OF CSR DISCLOSURE MODERATE THE
RELATIONSHIP BETWEEN CSR PERFORMANCE AND FINANCIAL
PERFORMANCE

Sofia Dagfalk

Sofia Vögeli

Stockholm School of Economics

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Abstract

This paper examines the moderating effect of CSR disclosure quality on the relationship between CSR performance and financial performance, using a sample of European listed firms. It is predicted that CSR performance, jointly with CSR disclosure quality, has a positive effect on financial performance. We propose that CSR disclosure quality is a result of three key factors: if the company has its CSR disclosure audited, if the audit is carried out by a high-quality audit provider and if the auditor is independent from the reporting company. The results do not provide evidence supporting the hypotheses that CSR disclosure quality has a positive moderating effect on the relationship between CSR performance and financial performance. We provide four potential explanations for this but argue that the most plausible ones are that our sample may not accurately represent the population and that we may have endogeneity problems. The sample issue may be due to low data availability among smaller firms, causing us to drop observations. This study contributes to existing research by combining the two concepts CSR disclosure and CSR performance, which to the best of our knowledge has not been done before. Furthermore, it investigates two relatively unexplored aspects of auditing of CSR disclosure: audit provider quality and auditor independence.

Keywords:

CSR performance, financial performance, auditing of CSR disclosure, audit provider, auditor independence

Authors:

Sofia Dagfalk (42029)

Sofia Vögeli (42052)

Tutor:

Irina Gazizova, Assistant Professor at the Department of Accounting

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Sofia Dagfalk

Sofia Vögeli

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1. Introduction

In the last couple of years, investors have become more interested in information that enables them to better understand companies' long term value creation and invest money in companies they perceive as more sustainable. As a result, reporting of corporate social responsibility (CSR¹) information has significantly increased (IESBA, 2022). According to KPMG, 96% of the world's 250 largest companies² reported on CSR matters in 2022, and the rate is expected to grow further as new regulations on non-financial reporting are introduced (KPMG, 2022). A company's CSR disclosure is in turn used as a basis for evaluating its CSR performance, often measured as a CSR score. This development has resulted in a plethora of research within the field, many of those trying to determine the financial benefits of a firm's CSR performance (Albuquerque et al., 2019; Brammer & Millington, 2008; Di Giuli & Kostovetsky, 2014; Lins et al., 2017). However, these studies present mixed results, where some suggest a positive relationship between CSR performance and financial performance³, while others suggest a negative one. While many studies offer theoretical support for a positive relationship, the inconsistent empirical findings may point to an issue in how CSR performance is measured, as the commonly used CSR score may not always accurately reflect a company's true CSR performance.

The difficulties in establishing a definite link between CSR and financial performance may also suggest that the relationship is moderated by other factors. This is supported by previous research that provides evidence that the effect of CSR performance on financial performance is stronger when incorporating other variables, such as level of product differentiation, customer awareness and industry specific contexts (Albuquerque et al., 2019; Baird et al., 2012; Servaes & Tamayo, 2013). This paper aims to extend prior research and examine how various aspects of auditing of CSR disclosure⁴ moderate the relationship between CSR and financial performance. This is investigated because investors and other stakeholders are increasingly relying on CSR disclosures to make informed decisions. However, the recurring challenge of

¹ The European Commission (2011) defines CSR as "the responsibility of enterprises for their impact on society". This includes integrating social, environmental, ethical, consumer and human rights matters into their strategy, as well as following the law. CSR, sustainability and ESG are frequently used interchangeably in both academic and practical contexts. Therefore, we follow the same practice in this study.

² This refers to the 250 largest companies by revenue based on the Fortune 500 rankings.

³ Hereafter, when mentioning CSR performance and financial performance, we refer to it as CSR and financial performance.

⁴ This refers to an audit that is carried out by an external auditor on a company's reported CSR disclosure.

greenwashing⁵ continues to pose a threat to investor protection. This may be caused by elements such as availability and quality of corporate CSR data, as well as an inadequate control environment. Auditing is pointed out as a way to enhance the quality of the CSR disclosure and lower the risk that stakeholders would be misled about how closely a firm complies with its CSR targets (IOSCO, 2020). As a result, an increasing number of companies are getting their CSR disclosures audited, with the audit rate among the world's 250 largest companies reaching 63% in 2022 (KPMG, 2022). Given the quality-enhancing role of auditing, it is expected that a firm's CSR performance is more reliable when its CSR disclosure is audited. Therefore, when using auditing as a moderating factor, we assume the relationship between CSR and financial performance to get stronger.

When examining the moderating effect of auditing of CSR disclosure on the relationship between CSR and financial performance, we are combining two interconnected concepts: CSR performance and CSR disclosure. CSR performance reflects how well a company performs with regards to environmental, social and governance issues (Refinitiv, 2022). Since it is based on data from various sources, including annual reports, corporate websites, and news outlets, it is closely connected to what the company discloses. CSR disclosure, on the other hand, pertains to what extent a company discloses information about its CSR activities, typically presented in a CSR report (Li et al., 2018). This study combines auditing, which is connected to CSR disclosure since an audit is made on the CSR disclosure, with CSR performance. To the best of our knowledge, this is different from previous research and is motivated by the fact that the CSR performance to a large extent is based on the CSR disclosure. Therefore, auditing of CSR disclosure, with the objective of improving its reliability and accuracy, may have a certain spillover effect on the reliability of a firm's CSR performance. As a result, we expect that a company's CSR performance have a greater impact on financial performance when the CSR disclosure is audited. In addition, by considering the moderating role of auditing of CSR disclosure, we address the problem of the accuracy of the CSR score, as a proxy for CSR performance, which previously was acknowledged as a potential reason for prior studies' inconsistent results.

While some studies suggest that auditing of CSR disclosure provides internal benefits to a firm such as improved controls and processes related to collecting and reporting CSR data (KPMG,

⁵ European Commission (2020) defines greenwashing as “companies giving a false impression of their environmental impact or benefits”.

2021), and external benefits such as increased credibility of the CSR disclosure (Cuadrado-Ballesteros et al., 2017; Titman & Trueman, 1986), other studies question this and argue that auditing is more of a symbolic action (Ball et al., 2000; Michelon et al., 2015; O'Dwyer & Owen, 2005). Therefore, to further explore the various aspects of auditing of CSR disclosure, we also investigate the moderating role of audit provider quality and auditor independence from the reporting company. Audit provider quality is investigated because prior research, mainly within financial auditing, indicates that accounting firms and Big 4⁶ firms, as opposed to non-accounting firms and non-Big 4 firms, provide auditing of higher quality (Ballou et al., 2018; Becker et al., 1998; Palmrose, 1988; Pflugrath et al., 2011). Furthermore, auditor independence is investigated as previous research, mainly within financial auditing, suggests that audit quality will suffer if auditors lose their independence and become less likely to report irregularities (Boone et al., 2008; Di Giuli & Kostovetsky, 2014; Tepalagul & Lin, 2015). We argue that the three previously mentioned factors: if the company has its CSR disclosure audited, if the audit is carried out by a high-quality audit provider and if the auditor is independent from the reporting company, form the basis of a company's CSR disclosure quality. The CSR disclosure quality is in turn believed to positively moderate the relationship between CSR and financial performance. Therefore, this study aims to answer the following research question:

Does CSR disclosure quality play a moderating role for the relationship between CSR performance and financial performance?

This study is of interest for researchers and practitioners for four reasons. Firstly, there is a need to examine additional dimensions of CSR because previous research indicate that it is difficult to identify a definite relationship between CSR and financial performance. We add CSR disclosure quality as an additional dimension and link it to CSR performance, which extends existing research within the field. Secondly, we believe our research is of interest for companies as it can provide guidance as to whether it is financially justified to invest in resources that improve their CSR disclosure quality. Thirdly, we believe our study is of relevance for audit providers as it gives them additional knowledge about the financial value of their services. Fourthly, we think our research is of interest for investors as it gives them

⁶ Big 4 refers to the four largest international accounting firms, offering auditing and other advisory services. This includes Deloitte, EY, KPMG and PwC.

insight into how CSR disclosure quality affects the relationship between CSR and financial performance, which can act as guidance in their investment decisions.

Our study uses a sample of European listed firms between 2012-2022 and is conducted using three different regression models, testing three different hypotheses. The first regression model examines the moderating effect of auditing of CSR disclosure on the relationship between CSR and financial performance. The second one examines the moderating effect of audit provider quality on the relationship between CSR and financial performance. This is tested using two different proxies for audit provider quality. First, we use accounting firms as audit providers as a proxy for provider quality and regress it against non-accounting firms, which includes sustainability consultants and other certification providers. Then, we use Big 4 firms as audit providers as a proxy for provider quality and regress it against non-Big 4 firms, which includes other smaller accounting firms, sustainability consultants and other certification providers. The third regression model examines the moderating effect of auditor independence on the relationship between CSR and financial performance. We consider an auditor to be independent if the company uses different audit providers for its CSR and financial disclosures.

This study makes two main contributions to existing research. Firstly, it extends previous literature by combining the concepts CSR disclosure and CSR performance, which to the best of our knowledge has not been done before. For example, previous research investigates the link between CSR disclosure and financial performance (Buchanan et al., 2018; Dhaliwal et al., 2011; Richardson & Welker, 2001), CSR performance and financial performance (Albuquerque et al., 2019; Di Giuli & Kostovetsky, 2014; Lins et al., 2017) and CSR disclosure quality and financial performance (Marshall et al., 2009), but does not combine the concepts as we do. Secondly, this study contributes to existing research by investigating two relatively unexplored aspects of auditing of CSR disclosure: audit provider quality and auditor independence. These aspects have previously been investigated in the context of financial auditing (Becker et al., 1998; Boone et al., 2008; DeAngelo, 1981; Johnson et al., 2002; Palmrose, 1988; Watkins et al., 2004), but we bring it into the context of CSR. However, we do not find evidence that supports the hypotheses that CSR disclosure quality positively moderates the relationship between CSR and financial performance.

This paper consists of seven sections. Section 2 introduces the reader to the current state of CSR reporting. Section 3 presents previous research, which is structured based on four parts: the relationship between CSR and financial performance, the moderating effect of auditing, the

moderating effect of audit provider quality and the moderating effect of auditor independence. These culminate in the study's three hypotheses. Section 4 explains the regression models, the variables, the data collection and the sample selection process. Section 5 presents the descriptive statistics, results, analysis, robustness checks and additional analysis. Section 6 includes discussion of our results. Section 7 presents the paper's conclusions, limitations, and suggestions for future research.

2. Institutional background

This section provides a brief description of the CSR reporting landscape. We start with defining the term CSR reporting and then explain the absence of an internationally standardised framework for CSR reporting. Thereafter, we explain the CSRD, the new EU regulations for CSR reporting.

2.1 Current state of CSR reporting

CSR has in recent years gained importance, and as a result of companies' substantial influence on citizens all over the world they have a responsibility to act (European Commission, 2023). Companies need to understand the effect of their operations on society and the environment, and communicate this information to investors and other stakeholders. This can be accomplished by disclosing CSR information, primarily through the publication of an annual CSR report. This is an internal and external facing document where companies report how their operations affect people and the environment, as well as what kind of risk they face socially and environmentally (European Commission, 2023). The report should include information about environmental and social matters, employee treatment, human rights compliance, the diversity of the board, as well as anti-corruption and bribery. It can be a stand-alone report specifically focusing on CSR or be integrated with the company's financial report. These non-financial disclosures, in the form of an annual CSR report, have on an EU level been required for companies with over 500 employees since 2017 (Directive 2014/95/EU).

Currently, in absence of an internationally standardised framework for CSR reporting, there are several widely used ones. According to KPMG (2022), the most commonly used CSR reporting standard globally is the GRI (Global Reporting Initiative). The GRI guidelines make it possible for any organisation to comprehend and report on CSR matters in a comparable and reliable manner, increasing transparency on its contribution to sustainable development (GRI, n.d). There are also other standards and guidelines that dominate in some regions, such as the Sustainability Accounting Standards Board (SASB) standards, part of the IFRS foundation, or local stock exchange guidelines. The wide variety of reporting standards used makes comparisons across businesses and markets difficult (KPMG, 2022). This may also negatively impact capital markets' and stakeholders' trust in these reports. Hence, mechanisms that increase the comparability and reliability of the CSR disclosure are likely important to increase the usage and relevance of it.

Fortunately, the requirements for CSR reporting are modernised and strengthened by the new regulations known as Europe's Corporate Sustainability Reporting Directive (CSRD). It took effect on January 5, 2023, and will be applicable for reporting for the fiscal year 2024. All large or publicly traded companies must after these regulations publish an annual CSR report. Furthermore, these companies will have to report in accordance with the European Sustainability Reporting Standards (ESRS), which will contribute to the standardisation of CSR reporting. The CSRD will also mandate companies to get their CSR disclosure audited, to ensure compliance with EU reporting standards and reliability of the information that they disclose. However, this is not mandatory yet, and not applicable for the time period of this study. Altogether, the CSRD will help contribute to increasing transparency of CSR disclosures towards investors and other stakeholders (European Commission, 2023). However, despite the stricter rules of the CSRD, companies will still have several options for how they disclose CSR information and which auditor to select. These choices may impact how effectively the new regulations will increase transparency and improve stakeholders' trust in CSR disclosures.

3. Literature review

The following section describes the theoretical concepts and prior research related to this study. We start with a review of the theoretical and empirical landscape of CSR and financial performance. Thereafter, we present research related to the three key factors that we argue constitute CSR disclosure quality and expect moderate the relationship between CSR and financial performance. These form our three hypotheses.

3.1 CSR and financial performance

The relationship between CSR and financial performance is discussed in numerous research, where some suggest a positive relationship (Albuquerque et al., 2019; Lins et al., 2017) and others suggest a negative one (Brammer & Millington, 2008; Di Giuli & Kostovetsky, 2014). The theoretical framework that typically is used to explain a positive relationship is the stakeholder theory. Freeman (2010) discusses the main ideas of this theory and emphasises the importance of considering the interests of all stakeholders impacted by a company's actions in order for it to succeed. This is supported by Berman et al. (1999), which examine the relationship between stakeholder management and financial performance. The authors discover that firm financial performance is positively associated with actively engaging with stakeholders and incorporating their input into decision-making, suggesting that stakeholder orientation can be a source of competitive advantage. Similarly, Hillman and Keim (2001) assert, based on their findings, that companies' actions and investments closely related to their key stakeholders, such as employees, customers, suppliers and communities, may not only benefit these parties but also increase shareholder wealth. This is because these kinds of investments can aid businesses in creating intangible valuable resources like improved brand reputation, lower employee turnover, and increased consumer and supplier loyalty. The authors contend, however, that allocating corporate funds to social problems unrelated to companies' key stakeholders may not create value for shareholders.

In line with the ideas outlined by the stakeholder theory, there are studies providing evidence of a positive relationship between CSR and financial performance. For instance, Lins et al. (2017) find that during the financial crisis, firms with superior CSR performance outperform firms with inferior CSR performance on stock returns by at least four percentage points. These findings suggest that the trust that firms have built up through investments in social capital pays off when the overall trust in corporations and markets is low. Similarly, Albuquerque et

al. (2019) examines the link between CSR performance and firm value using a U.S sample. The authors find a positive relationship between the two variables, which is even stronger for firms with greater product differentiation, proxied by advertising spending, suggesting that CSR is a product differentiation strategy.

Studies that provide evidence of a negative relationship between CSR and financial performance typically find support for their findings in the agency theory. This theory outlines the issues associated with the separation of ownership and control in modern enterprises, where shareholders delegate control of their assets to company managers. According to the theory, agency problems occur between shareholders and their agents, the company managers, because managers' interests are not necessarily aligned with those of shareholders (Jensen & Meckling, 1976). In line with the theory, Friedman (1970) argues that engaging in CSR is a misuse of company funds that would be better used for shareholder returns or valuable internal projects. Consequently, spending resources on CSR puts the firm in a position of competitive disadvantage towards its competitors and may decrease firm value as it represents additional costs. Barnea and Rubin (2010) support this view and argue that engaging in CSR initiatives produces significant managerial benefits rather than gains for the company's shareholders, emphasising the problem of company managers acting against their shareholders' best interests.

In line with these arguments, there are studies that empirically document a negative relationship between CSR and financial performance. For instance, Brammer and Millington (2008) use corporate charitable giving as a proxy for CSR performance and find that companies with unusually poor CSR performance have the strongest financial performance in the short run. However, the opposite relationship holds in the long run, suggesting that social responsiveness takes time to transfer into greater financial returns. Another study that finds a negative relationship between CSR and financial performance is Di Giuli and Kostovetsky (2014). The authors find that increases in firm CSR scores are associated with negative future stock returns and declines in return on assets, indicating that any social responsibility-related gains to stakeholders come at the direct expense of firm value.

3.2 The moderating effect of auditing

Based on the mixed findings of the previous section, a more targeted research approach may be necessary to fully understand the relationship between CSR and financial performance. One

possible way of doing this is by studying the potential moderating effect of additional variables on the relationship between CSR and financial performance. This aligns with previous research by Albuquerque et al. (2019) who find that advertising spend, as a proxy for product differentiation, moderates the relationship between CSR and financial performance. Similarly, Servaes and Tamayo (2013) find that the relationship between CSR and firm value is positive for firms with high customer awareness. This provides evidence that CSR activities can add value to the firm, but only under certain conditions. Moreover, Baird et al. (2012) find that the relationship between CSR and financial performance is partly conditioned on a firm's industry specific context. In this study, we extend previous literature by further investigating how this relationship is moderated and choose to examine if auditing of CSR disclosure moderates the relationship between CSR and financial performance.

We choose to investigate this because auditing of CSR disclosure is proven to offer several benefits for companies. From an internal perspective, companies can benefit from auditors' expertise by undertaking an independent inspection and analysis of their CSR activities. This process helps them identify areas for improvement in measuring, monitoring, understanding, and evaluating their CSR activities. Furthermore, it drives companies to improve internal processes and controls related to collecting and reporting CSR data (KPMG, 2021). Therefore, we anticipate auditing to improve CSR disclosure quality and ensure that companies truly work with CSR. This will allow these businesses to reap the benefits of CSR, such as the ability to create valuable intangible resources (see section 3.1), since their CSR work goes beyond window dressing. Consequently, we expect auditing of CSR disclosure to strengthen the relationship between CSR and financial performance.

From an external perspective, auditing is recognised as a control mechanism to decrease information asymmetry between company shareholders and managers. A theory useful to understand this phenomenon is the signalling theory. This theory describes it as one party, the sender, chooses whether and how information should be communicated (signalled), and the other party, the receiver, chooses how to interpret the signal (Connelly et al., 2011). Hence, company insiders, with superior access to information, can choose what kind of information to publish to the market depending on the signal they want to send. In the context of CSR reporting, companies may overstate their CSR activities to present themselves in a better light to investors and other stakeholders. Given this, companies can add credibility to their CSR disclosure, and strengthen the signal of it, by having an external auditor review the information

(Titman & Trueman, 1986). Cuadrado-Ballesteros et al. (2017) provide evidence of this and find that CSR disclosure reduces information asymmetry more when it is audited, using analysts' forecasts as a proxy for information asymmetry. Hence, the authors conclude that auditing signals enhanced accuracy and reliability of the CSR disclosure.

However, some research questions the relevance of auditing of CSR disclosure. For instance, Ball et al. (2000) assess whether audit statements in corporate environmental reports support organisational transparency and external parties' empowerment. The authors' findings raise concerns about the independence of the audit, as there are indications of auditee control over the process. Based on this, it is concluded that current audit practices serve a managerial function rather than a corporate commitment to external transparency and accountability. This sceptical view is further supported by O'Dwyer and Owen (2005), who examine the extent to which audit practices enhance accountability and transparency to stakeholders. Their critical analysis of audit statements suggests that auditing of CSR disclosure is often overly influenced by management and does not question the accuracy or relevance of the reporting. Michelon et al. (2015) extend this view and explore the symbolic versus substantive use of three CSR reporting practices: the use of a stand-alone report, GRI guidelines, and auditing. The findings imply that none of these three CSR practices are linked to better disclosure quality, indicating that they are more symbolic than substantive. If this is the case, there is a risk that stakeholders will not perceive auditing as a signal of organisational transparency and accountability.

Another reason for the mixed results between CSR and financial performance, which does not indicate that the relationship is moderated by other factors, is the difficulty of measuring CSR performance. One widely used measure of this is the CSR score (Albuquerque et al., 2019; Di Giuli & Kostovetsky, 2014; Lins et al., 2017) which represents how well a company performs with regards to environmental, social and governance issues. The CSR score is directly related to the information that the firm discloses since it is based on several sources, including annual and CSR reports, company websites, stock market filings, news sources and NGO websites (Refinitiv, 2022). However, as a company can portray itself as more sustainable than it really is, in its CSR disclosure, there is a risk of greenwashing. This makes it vital that the CSR disclosure is reliable, otherwise the CSR score will not be an accurate indicator of a company's CSR performance. One of the main objectives of auditing of CSR disclosure is to address this reliability gap through an external and allegedly independent verification of the quality of the disclosed information (IOSCO, 2020). As this is a method of enhancing the accuracy of a

company's CSR disclosure, it makes the information on which the CSR score is based more reliable, thereby increasing the score's reliability.

To summarise, we extend previous literature and examine the moderating effect of auditing of CSR disclosure on the relationship between CSR and financial performance. From an internal perspective, auditing can help improve processes and controls related to collecting and reporting CSR data. This is expected to ensure that companies genuinely engage in CSR and can fully reap its benefits. From an external perspective, auditing can add reliability to the CSR disclosure and thereby enhance the signalling effect of it. Therefore, auditing of CSR disclosure is expected to strengthen the relationship between CSR and financial performance. Accordingly, we form the following hypothesis:

H1: Auditing of CSR disclosure has a positive moderating effect on the relationship between CSR and financial performance.

3.3 The moderating effect of audit provider quality

The previous section indicates that auditing of CSR disclosure may moderate the relationship between CSR and financial performance, but there are also opposing views. To further explore this, we consider the role of different audit providers. This can be seen as an indicator of audit quality and is therefore assumed to affect the value that auditing adds to the reporting company. Supporting this, Kausar et al. (2016) argue that conducting an audit is important, but the effectiveness of reducing information asymmetry and financial friction depends on the selected audit provider. Unlike financial auditing, auditing of CSR disclosure can be performed by both accounting firms, such as Big 4 firms, and non-accounting firms, such as sustainability consultants and other certification providers. Nevertheless, there are different opinions on which provider delivers it with the best quality. Traditional auditing of financial disclosures is defined by accounting standards and financial regulations, making members of the accounting profession the natural choice. However, auditing of CSR disclosure covers areas such as emissions and international labour laws, where accountants may not be the natural choice of auditor (Pflugrath et al., 2011). Consequently, sustainability consultants claiming expertise in social and environmental activities have emerged (Hodge et al., 2009).

Previous research highlights differences in the audit methodologies used by accountants and sustainability consultants. For instance, Deegan et al. (2006) find that accountants' audit statements typically do not include suggestions, compliments, or commentary regarding the

organisation's systems and procedures. In contrast, audits provided by other actors, such as sustainability consultants, typically include such supplementary commentary, which can make them more informative and clear to users of the report. However, other researchers argue that accountants are the more suitable auditor of non-financial disclosures, because of their strong and engaged set of quality control mechanisms, and well-developed body of international standards and ethics (Pflugrath et al., 2011). Consequently, accounting professionals typically exhibit higher independence and objectivity than non-accountants (Knechel et al., 2006). Additionally, their strong reputational capital leads to greater confidence and audit quality (King & Schwartz, 1998). Considering the objectivity and reputation of accounting firms, and that auditing of CSR disclosure is a relatively new concept, we expect that an audit conducted by an accounting firm provide more internal benefits and a stronger signalling effect compared to a non-accounting firm. This is supported by Ballou et al. (2018), who find that accounting firms improve reporting quality more effectively than non-accounting firms, as evidenced by CSR restatements. Similarly, Pflugrath et al. (2011) demonstrate in a behavioural experiment that the credibility of a CSR report is higher when it is audited by an accountant compared to a sustainability consultant. The authors partly attribute this to the reputation and the quality control mechanisms of the accounting profession.

Another indication of audit quality is the audit provider's size and brand name. DeAngelo (1981) finds that for auditing of financial disclosures, the quality of the disclosure improves with these two characteristics. In line with this, Watkins et al. (2004) argue that as brand name reputation increases, the auditor improves control measures such as audit planning, increase audit fees, discretion over client acceptance and continuance to mitigate litigation exposure. As a result, those with better reputation will be more likely to take precautions to reduce risk, leading to increased audit quality and information credibility. A frequently used proxy for firms with strong brand name and reputation is the largest international accounting firms. For instance, Palmrose (1988) compares litigation activities of auditors as a means of evaluating auditor quality and shows that Big 8⁷ firms have lower litigation activity than non-Big 8 firms. In a similar vein, Becker et al. (1998) investigate the relation between audit quality and earnings management, using Big 6⁸ audit providers as a proxy for audit quality. The results suggest that non-Big 6 auditors allow more earnings management than Big 6 auditors. These examples

⁷ This refers to the eight largest international accounting firms at the time, offering auditing and other advisory services.

⁸ This refers to the six largest international accounting firms at the time, offering auditing and other advisory services.

indicate that an audit performed by one of the largest international accounting firms, today typically referred to as a Big 4 firm, provides more internal benefits to the reporting firm and a stronger signalling effect than an audit performed by another firm.

To summarise, previous research suggests that the internal benefits and the signalling effect of auditing of CSR disclosure may depend on the selected audit provider. We expect that having an accounting firm as opposed to a non-accounting firm, or a Big 4 firm as opposed to a non-Big 4 firm, as audit provider improves CSR disclosure quality. This is expected to be translated into a positive moderating effect on the relationship between CSR and financial performance. Based on this, we form the following hypothesis:

H2: Auditor provider quality has a positive moderating effect on the relationship between CSR and financial performance.

3.4 The moderating effect of auditor independence

The previous section indicates that various aspects of auditing of CSR disclosure may moderate the relationship between CSR and financial performance. Therefore, in addition to investigating the role of audit provider quality, we investigate the role of auditor independence. Auditor independence has for a long time been recognised as a critical factor by academics and regulators. In 2014, the current EU reform was adopted, prohibiting auditors of financial disclosures from providing certain non-audit services to their audit clients and mandating regular rotation (European Commission, 2022). This regulatory action aims to safeguard auditor independence as it directly impacts audit quality. DeAngelo (1981) defines audit quality as the probability that an auditor will (a) uncover a breach and (b) report the breach, indicating that audit quality suffers when auditor independence is compromised. Tepalagul and Lin (2015) identify four main threats to auditor independence: (a) client importance, (b) non-audit services, (c) auditor tenure, and (d) client affiliation with audit firms. The rationale behind this is that auditors have incentives to yield to client pressure to keep major clients and profitable non-audit clients. Moreover, long-term customer relationships and connections between clients and audit firms encourage familiarity that may jeopardise the independence and standard of the audit. Given these considerations, we expect that auditor independence increases the internal benefits and the signalling effect of auditing of CSR disclosure.

However, the notion that non-audit services pose a threat to auditor independence is challenged by other researchers. DeFond et al. (2002) argue against the assumption that auditors are willing

to sacrifice independence for high non-audit fees. The authors find no significant association between non-audit service fees and impaired auditor independence, suggesting that market-based incentives such as loss of reputation and litigation costs outweigh the benefits from compromising auditor independence. Similarly, Johnson et al. (2002) challenge current regulations and prior research. Their study examines the relationship between the length of the relationship between a company and an audit firm (audit-firm tenure) and financial reporting quality. The results indicate that short audit-firm tenures, of two to three years, are associated with lower financial reporting quality than medium audit-firm tenures, of four to eight years. This suggests that auditors require client-specific knowledge to detect material misstatements, creating a learning curve for new auditors (Knapp, 1991). These examples raise doubts about the positive impact of auditor independence on the internal benefits and signalling effect of auditing of CSR disclosure.

Despite these doubts of the relevance of auditor independence, there are empirical studies that provide evidence of the implications of decreased auditor independence. Boone et al. (2008) find that equity risk premium decreases in the early years of audit-firm tenure but increases with additional years of tenure. Therefore, as the length of the client relationship extends, the risk of the firm increases. This suggests that auditor independence positively impacts auditing quality, lowering information risk. This, along with prior research and regulatory actions, highlights the role of auditor independence in improving CSR disclosure quality. This is expected to be translated into a positive moderating effect on the relationship between CSR and financial performance. Hence, we form the following hypothesis:

H3: Auditor independence has a positive moderating effect on the relationship between CSR and financial performance.

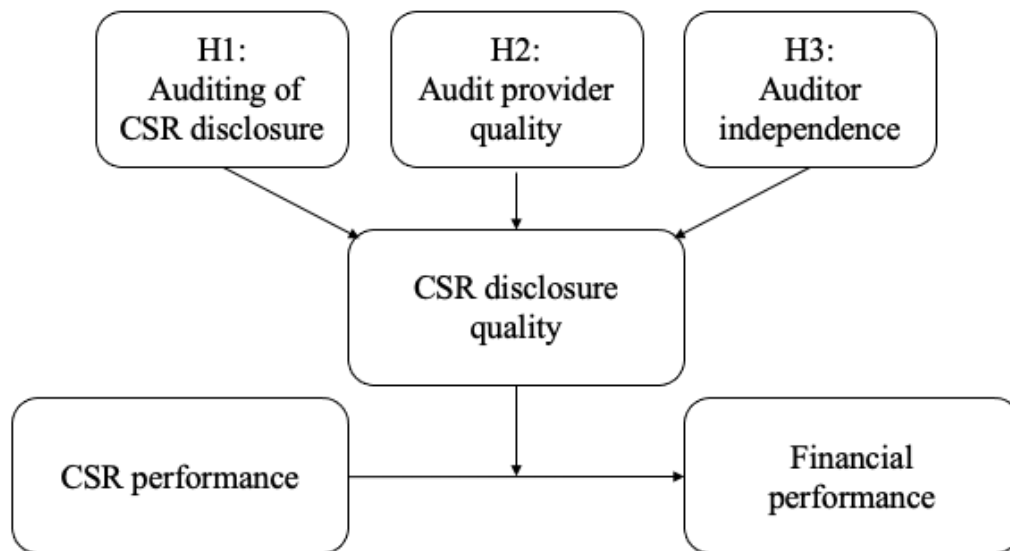


Figure 2. Summary of hypotheses

4. Method

This section outlines the methodology used in this study. We start by describing the regression models that are used to test our three hypotheses. This is followed by an explanation of the variables and additional controls included in these models. Thereafter, we present the process of collecting and adjusting of the data.

4.1 Regression models

To investigate whether CSR disclosure quality has a moderating effect on the relationship between CSR and financial performance, we perform four ordinary least squares (OLS) regressions testing our three hypotheses.

Hypothesis 1.

We test our first hypothesis, that auditing of CSR disclosure has a positive moderating effect on the relationship between CSR and financial performance, by using the following regression model:

$$\text{Financial Performance}_{i,t} = \beta_0 + \beta_1 \text{CSR}_{i,t-1} + \beta_2 \text{AUDIT}_{i,t-1} + \beta_3 \text{CSR} * \text{AUDIT}_{i,t-1} + \beta_4 \text{SIZE}_{i,t-1} + \beta_5 \text{DA}_{i,t-1} + \beta_6 \text{PB}_{i,t-1} + \text{Year FE} + \text{Sector FE} + \text{Country FE} + \varepsilon_{i,t} \quad (1)$$

We conduct the regression using Tobin's Q, stock return and return on assets as proxies for financial performance. The key variable of interest in the regression model is $\text{CSR} * \text{AUDIT}$, which captures the difference in the effect of CSR on financial performance between firms that have and do not have their CSR disclosure audited. The null hypothesis states that auditing does not have a positive moderating effect on the relationship between CSR and financial performance, while the alternative hypothesis states that it has a positive moderating effect. Hence, a positive coefficient of $\text{CSR} * \text{AUDIT}$ would indicate that when controlling for other factors, the average increase in financial performance led by CSR performance is larger for firms with audited CSR disclosure.

Hypothesis 2.

We test our second hypothesis, that audit provider quality has a positive moderating effect on the relationship between CSR and financial performance, by using the following regression model:

$$\text{Financial Performance}_{i,t} = \beta_0 + \beta_1 \text{CSR}_{i,t-1} + \beta_2 \text{PROVQ}_{i,t-1} + \beta_3 \text{CSR} * \text{PROVQ}_{i,t-1} + \beta_4 \text{SIZE}_{i,t-1} + \beta_5 \text{DA}_{i,t-1} + \beta_6 \text{PB}_{i,t-1} + \text{Year FE} + \text{Sector FE} + \text{Country FE} + \varepsilon_{i,t} \quad (2)$$

We conduct the regression using two different proxies for audit provider quality, accounting firms (versus non-accounting firms) and Big 4 firms (versus non-Big 4 firms). Moreover, we use Tobin's Q, stock return and return on assets as proxies for financial performance. The key variable of interest in the regression model is $\text{CSR} * \text{PROVQ}$, which captures the difference in the effect of CSR on financial performance between firms that have and do not have high-quality auditors. The null hypothesis states that audit provider quality does not have a positive moderating effect on the relationship between CSR and financial performance, while the alternative hypothesis states that it has a positive moderating effect. Hence, a positive coefficient of $\text{CSR} * \text{PROVQ}$ would indicate that when controlling for other factors, the average increase in financial performance led by CSR performance is larger for firms that have their CSR disclosure audited by a high-quality audit provider.

Hypothesis 3.

We test our third hypothesis, that auditor independence has a positive moderating effect on the relationship between CSR and financial performance, by using the following regression model:

$$\text{Financial Performance}_{i,t} = \beta_0 + \beta_1 \text{CSR}_{i,t-1} + \beta_2 \text{AIND}_{i,t-1} + \beta_3 \text{CSR} * \text{AIND}_{i,t-1} + \beta_4 \text{SIZE}_{i,t-1} + \beta_5 \text{DA}_{i,t-1} + \beta_6 \text{PB}_{i,t-1} + \text{Year FE} + \text{Sector FE} + \text{Country FE} + \varepsilon_{i,t} \quad (3)$$

We conduct the regression using Tobin's Q, stock return and return on assets as proxies for financial performance. The key variable of interest in the regression model is $\text{CSR} * \text{AIND}$, which captures the difference in the effect of CSR on financial performance between firms that have and do not have independent auditors. The null hypothesis states that auditor independence does not have a positive moderating effect on the relationship between CSR and financial performance, while the alternative hypothesis states that it has a positive moderating effect. Hence, a positive coefficient of $\text{CSR} * \text{AIND}$ would indicate that when controlling for

other factors, the average increase in financial performance led by CSR performance is larger for firms that have their CSR disclosure audited by an independent auditor.

4.2 Variables

4.2.1 Dependent variables

Previous literature investigating CSR performance and its effect on financial performance use different proxies for financial performance. The proxies that typically are used can be divided into two categories: market-based measures and accounting-based measures. We conduct our analysis using two market-based proxies for financial performance: Tobin's Q and stock return, as well as one accounting-based proxy: return on assets.

Tobin's Q is the market value of the firm divided by the replacement value of assets (Servaes & Tamayo, 2013). Following Albuquerque et al. (2019) we calculate Tobin's Q as the market value of the firm's outstanding shares plus book value of debt, divided by total assets (see appendix A for a detailed explanation of each variable). This is a widely used performance measure in economics, finance, and strategy, which demonstrates a firm's capacity to generate value from its existing asset base (Albuquerque et al., 2019; Servaes & Tamayo, 2013). The advantage of this measure is its long-term perspective compared to profitability, which is more of a short-term measure. A short-term measure might be biased as companies may sacrifice current profitability by employing CSR activities that will benefit them in the long run.

Stock return is a measure of the percentage change in a company's share price. This change is calculated from the start of the year until the end of the year. Previous studies have found that investors value CSR when making decisions and it is therefore relevant to include the combined perception of investors as a proxy for financial performance (Brammer & Millington, 2008; Di Giuli & Kostovetsky, 2014; Lins et al., 2017). Hence, using stock return as a proxy for financial performance is in line with previous research within the field of CSR.

Return on assets is a measure of a firm's short-term profitability and is calculated by dividing net income by average total assets. It is consistently argued to be an appropriate measure of financial performance in previous literature (Berman et al., 1999; McGuire et al., 1988; Mishra & Suar, 2010; Waddock & Graves, 1997). A higher return on assets indicates greater value generation for shareholders because it is positively connected with stock price. In contrast to other accounting metrics, return on assets is unaffected by varying levels of leverage.

Moreover, it is a better gauge of company performance in asset-heavy businesses like manufacturing companies (Mishra & Suar, 2010).

4.2.2 Independent variables

As previously mentioned, we propose that CSR disclosure quality is made up of three key factors: if the company has its CSR disclosure audited, if the audit is carried out by a high-quality audit provider and if the auditor is independent from the reporting company. Hence, in order to investigate how CSR disclosure quality moderates the relationship between CSR and financial performance, we analyse the effect of each of these three key factors, in conjunction with CSR performance, on financial performance. These are constructed as interaction terms.

CSR performance is measured as a normalised score taking a value between 0 and 100, where a higher score indicates a greater CSR performance. This score is obtained from Refinitiv Eikon, which is one of the most comprehensive databases for CSR data and covers 85 percent of the global market capitalisation across more than 630 different CSR metrics. It is designed to transparently and objectively measure a company's CSR performance, commitment and effectiveness, based on company-reported data. The scoring system encompasses ten distinct categories: resource use, emissions, innovation, workforce, human rights, community involvement, product responsibility, management practices, shareholder engagement and CSR strategy. Additionally, it takes into account the company's relative CSR performance compared to its specific sector and country of incorporation. The individual category scores are then aggregated into three pillar scores – environmental, social, and corporate governance – which are combined to a CSR score (Refinitiv, 2022).

Audit is constructed as a dummy variable taking the value 1 if the company has its CSR disclosure audited and 0 if not. It is included in the regression testing hypothesis one.

Accounting firm provider is constructed as a dummy variable taking the value 1 if the company has its CSR disclosure audited by an accounting firm and 0 if audited by a non-accounting firm. Accounting firms include the Big 4 and other smaller accounting firms, whereas non-accounting firms include other audit providers such as sustainability consultants and other certification providers. This variable is included in one of the regressions testing hypothesis two.

Big 4 firm provider is constructed as a dummy variable taking the value 1 if the company has its CSR disclosure audited by a Big 4 firm and 0 if audited by a non-Big 4 firm. Big 4 firms include the Big 4, whereas non-Big 4 firms include other smaller accounting firms and non-accounting firms, such as sustainability consultants and other certification providers. This variable is included in one of the regressions testing hypothesis two.

Auditor independence is constructed as a dummy variable taking the value 1 if the company has its CSR disclosure audited by an independent auditor and 0 if not. We consider an auditor to be independent if the company has different audit providers for its CSR and financial disclosures. The variable is included in the regression testing hypothesis three.

4.2.3 Control variables

In our regressions, we also include several control variables. These are aimed to control for factors that may explain a firm's financial performance, in addition to our independent variables.

Size is measured as the natural logarithm of total assets. This variable is included to control for any firm size related effects on financial performance, as prior research suggests that it is typically negatively associated with financial performance (Albuquerque et al., 2019; Fama & French, 1992). Including this control variable is in line with previous research within the field of CSR and financial performance (Albuquerque et al., 2019; Di Giuli & Kostovetsky, 2014).

*Price to book*⁹ is measured as the market value of the firm's outstanding shares over book value of equity and represents a company's relative valuation. Previous research finds that companies with a low price to book ratio, which the market judges to have poor prospects, have higher expected stock returns than firms with strong prospects (Fama & French, 1992). Hence, the variable is intended to control for this, and is expected to have a negative effect on financial performance. Including a relative valuation measure as a control variable is in line with previous research within the field of CSR and financial performance (Di Giuli & Kostovetsky, 2014).

⁹ In the case of Tobin's Q there are some similarities with the control variable price to book as both are ratios that represent a company's relative valuation. Due to these similarities, we test to exclude the control variable price to book in the regressions where Tobin's Q is used as a proxy for financial performance, to ensure that no mechanical relationship exists between these two. This does not significantly change the results of the regression (see appendix M).

Debt to assets is measured as long-term debt divided by total assets, representing firm leverage. Previous research suggest that high leverage has a negative effect on financial performance as it can be an indicator of financial distress (Becker et al., 1998), which makes us expect similar results. The control variable is included in line with previous research within the field of CSR and financial performance (Albuquerque et al., 2019; Fama & French, 1992; Lins et al., 2017).

To further control for factors that may explain a firm's financial performance, such as macroeconomic conditions (Gao & Zhang, 2015), we include fixed effects for sector¹⁰, country and year. Sector fixed effects absorb the variation between sectors and is relevant to include because the impact of CSR on financial performance varies by sector. The same applies for year and country fixed effects. Previous studies by Cuadrado-Ballesteros et al. (2017) and Albuquerque et al. (2019) also include these types of fixed effects. Furthermore, we cluster the standard errors based on firm in all regressions. This is a way to account for the lack of independence of the observations, as the same firm can enter the regression several times (Rogers, 1994). Additionally, employing clustered standard errors is a method to address the presence of heteroskedasticity, which we have observed indications of within our sample. To ensure that our variables are normally distributed, we winsorize *Tobin's Q*, *return on assets*, *stock return*, *size*, *debt to assets* and *price to book* at the 1st and 99th percentile level. Furthermore, we lag all of our independent and control variables by one year to give them enough time to have an effect on financial performance. This is in line with previous research (Albuquerque et al., 2019; Di Giuli & Kostovetsky, 2014).

4.3 Data collection and sample selection

The data in our study is collected from the database Refinitiv Eikon. This database is chosen due to its comprehensive selection of both CSR and financial data, giving access to all data points needed to conduct the research. Our sample consists of European listed firms and the data set is unbalanced. The sample period for our dependent variables, the three proxies for financial performance, is from 2012 to 2022, while the rest of the variables are from 2011 to 2021 as these are lagged by one year. We choose to limit the sample to Europe because of the homogeneity between the countries in terms of regulations and development within the field of auditing of CSR disclosure.

¹⁰ Classification by sector will be done in line with The North American Industry Classification System (NAICS) classification of 19 different sectors. This is a standard used to classify business establishments for the purpose of collecting, analysing, and publishing statistical data.

In Refinitiv Eikon there are 12,160 European listed companies, which for the time period of our study result in 145,920 firm-year observations. After removing observations without data for the variables *CSR performance*, *audit*, *size*, *debt to assets*, *price to book*, *Tobin's Q*, *stock return* and *return on assets*, and after lagging these variables (see table 1), we have a sample of 1,055 unique firms and 5,484 observations that is used to test our first hypothesis. For our second hypothesis we only include observations that have their CSR disclosure audited. Also, we remove observations without data for the variables *accounting-firm* and *Big 4 firm* (observations without the name of the auditor of their CSR disclosure), resulting in a sample of 822 unique firms and 4,268 observations. For our third hypothesis, we remove observations without data for the variable *auditor independence* (observations without the name of the auditor of their financial disclosure), which gives us a sample of 822 unique firms and 4,241 observations.

Table 1. Sample adjustment process

	What is left		What is removed	
Hypothesis 1	Observations	Unique firms	Observations	Unique firms
Total	145,920	12,160	85,211	12,173
Without CSR score	15,046	2,487	-130,874	-9,673
Without audit	7,848	1,424	-7,198	-1,063
Without size	7,739	1,408	-109	-16
Without debt to assets	7,116	1,319	-623	-89
Without price to book	7,065	1,315	-51	-4
Without Tobin's Q	7,017	1,314	-48	-1
Without stock return	6,976	1,310	-0	-0
Without return on assets	6,976	1,310	-41	-4
After lagging variables	5,484	1,055	-1,492	-255
Hypothesis 2	Observations	Unique firms	Observations	Unique firms
With audited CSR disclosure	4,814	907	-670	-148
With name of auditor of CSR disclosure	4,268	822	-546	-85
Hypothesis 3	Observations	Unique firms	Observations	Unique firms
With name of auditor of financial disclosure	4,241	822	-27	0

5. Results and analysis

This section describes and analyses the results. We begin by presenting descriptive statistics and a correlation matrix. Then, we present the main regressions, that test our three hypotheses, and analyse the results. Lastly, we conduct robustness checks of the results and additional analysis.

5.1 Descriptive statistics

In table 2, the descriptive statistics for our main variables are presented. Starting by observing our dependent variables, *TQ* has a mean of 1.322, a minimum value of 0.071 and a maximum value of 8.556. The mean value can be compared to the somewhat higher corresponding value in the studies of Albuquerque et al. (2019) and Servaes and Tamayo (2013), which are 1.885 and 2.1, respectively. Their maximum value is in line with ours at 8.410 and 12.81, but their minimum value is slightly higher at 0.759 and 0.69. The reasons for these discrepancies can be the time difference but also the various methods of calculating Tobin's Q. However, it should be noted that we follow the same logic as Albuquerque et al. (2019). Moreover, *ROA* and *RETURN* follow a similar pattern as *TQ*, with a maximum value somewhat further away from the other quartiles. Our mean *ROA* of 4.6% is lower than Albuquerque et al. (2019) that has a mean *ROA* of 9.2%, but higher than Di Giuli and Kostovetsky (2014) that has a one of 1%.

By observing the dummy variable *AUDIT*, we can conclude that a clear majority of the sample firms have their CSR disclosure audited, 85.6%. This can be compared to the audit rate among the world's 250 largest firms in 2022, that KPMG (2022) estimated to be 63%. It suggests that our sample is slightly skewed and may not accurately represent the population. Moreover, the variables *ACC* and *B4* tell us that most of the sample firms with audited CSR disclosures have an accounting firm, and even a Big 4 firm, as their audit provider. This, and the fact that our sample mostly consists of firms that have their CSR disclosure audited, differs slightly from earlier studies. In Cuadrado-Ballesteros et al.'s (2017) study, there is a clear increase in the proportion of companies that get their CSR disclosure audited over time. From 2007 to 2014, the proportion lies between 30.22% and 67.22% in their sample. The proportion of companies that have an accounting firm as audit provider is relatively stable over time, around 63.5%. Our sample likely has a higher proportion of companies with audited CSR disclosure because this type of auditing has become more common during the last couple of years. Furthermore, accounting firms have most probably committed more resources to be able to offer these sorts of services, which can explain the tilt towards these providers in our sample. Moreover, the

mean of *AIND* is 45.3%, suggesting that almost half of the sample firms have auditors that we consider to be independent.

SIZE has a mean of 9.127, a minimum value of 5.278 and a maximum value of 13.186. The corresponding variable of Albuquerque et al. (2019) and Di Giuli and Kostovetsky (2014) has a mean of 7.283 and 7.09, respectively. While it is important to consider the time difference between the studies, this can be an indication that our sample mainly consists of larger firms. Furthermore, our mean *DA* of 21.3% is slightly higher than that of Albuquerque et al. (2019).

Table 2. Descriptive statistics

Metric	N	Mean	Std	Min	Q1	Q2	Q3	Max
TQ	5,485	1.322	1.237	0.071	0.671	0.937	1.481	8.556
ROA	5,485	0.046	0.064	-0.163	0.014	0.040	0.073	0.283
RETURN	5,485	0.089	0.324	-0.648	-0.120	0.071	0.282	1.180
AUDIT	5,485	0.856	0.351	0	1	1	1	1
ACC	4,270	0.802	0.399	0	1	1	1	1
B4	4,269	0.760	0.427	0	1	1	1	1
AIND	4,243	0.453	0.498	0	0	0	1	1
CSR	5,485	64.356	15.530	7.208	53.866	65.942	76.216	95.278
SIZE	5,485	9.127	1.618	5.278	8.005	9.054	10.179	13.186
DA	5,485	0.213	0.140	0.000	0.109	0.197	0.302	0.608
PB	5,485	2.976	8.000	-149.126	1.109	1.887	3.449	445.946

5.2 Correlation matrix

In table 3, the Pearson's correlation matrix for our main variables is presented. This correlation matrix focuses on the linear relationship between continuous variables and is used to assess any potential multicollinearity. Presented in the table, we cannot detect any multicollinearity as all correlations between variables included in the same regression are below 0.7. The only correlation above 0.7 is between *ACC* and *B4*, and as these are not included in the same regression, it does not affect our results.¹¹

¹¹ We also conduct a Spearman's correlation test which instead of evaluating the raw data, evaluates the monotonic relationship between the variables based on its ranked values. By creating this correlation matrix, we can ensure that the correlation is not driven by a few extreme observations or other nonlinearities in the data. The results of this test do not show any signs of multicollinearity.

Table 3. Pearson correlation matrix

	TQ	ROA	RETURN	CSR	AUDIT	ACC	B4	AIND	SIZE	DA	PB
TQ	1.000										
ROA	0.471***	1.000									
RETURN	0.232***	0.205***	1.000								
CSR	-0.077***	-0.043***	-0.028**	1.000							
AUDIT	-0.080***	-0.062***	-0.040***	0.254***	1.000						
ACC	-0.010	-0.020	0.016	0.039**	-	1.000					
B4	-0.003	-0.009	0.030	0.086***	-	0.884***	1.000				
AIND	-0.023	-0.018	-0.012	-0.0109	-	-0.527***	-0.516***	1.000			
SIZE	-0.306***	-0.167***	0.015	0.523***	0.222***	0.078***	0.096***	0.003	1.000		
DA	-0.056***	-0.136***	-0.059***	0.022	0.081***	-0.025	-0.036**	0.060***	0.004	1.000	
PB	0.292***	0.181***	-0.007	0.003	-0.014	-0.014	-0.014	0.008	-0.066***	-0.018	1.000

5.3 Results

The following sections includes the results and analysis related to our three hypotheses, stating that auditing of CSR disclosure, audit provider quality and auditor independence has a positive moderating effect on the relationship between CSR and financial performance.

5.3.1 The moderating effect of auditing

In table 5, the results of the regressions testing our first hypothesis are presented. When using Tobin's Q as a proxy for financial performance, we observe a statistically significant positive coefficient of *CSR* and *AUDIT* at the 1% level and the 5% level respectively. Contrastingly, however, we observe a slightly negative statistically significant coefficient of the interaction term *CSR*AUDIT* at the 5% level. This suggests a negative moderating effect of auditing of CSR disclosure on the relationship between CSR and financial performance, which contradicts our first hypothesis. As the coefficient of the interaction term is slightly lower than the one of *CSR*, it indicates that as the CSR score increases a firm with audited CSR disclosure will have lower financial performance than a firm without. Therefore, if two companies have identical CSR score of ~50 or less, out of 100, the company with audited CSR disclosure will have higher financial performance, and if the CSR score is more than ~50, the opposite holds. This is illustrated in graph 1. Given that the mean CSR score in the sample is ~64 (see table 2), this result suggests that the total effect of auditing of CSR disclosure will generally be negative for the firms in our sample. With regards to the controls, we observe that *SIZE* has a statistically significant negative effect on financial performance at the 1% level, which goes in line with our expectations, while *DA* and *PB* does not have a statistically significant effect.

When using return on assets and stock return as proxies for financial performance, none of the variables *CSR*, *AUDIT* and *CSR*AUDIT* are statistically significant. This indicates that the variables do not contribute to explaining financial performance. However, as expected, we can observe that *SIZE* is negatively associated with financial performance at the 1% and the 5% level respectively for the different regressions. Moreover, *DA* has a statistically significant slightly negative effect on financial performance at the 1% level when using return on assets as a proxy for it, which also goes in line with previous research. Given that the coefficients of all statistically significant variables are relatively low, suggesting that these have a small impact on financial performance, the explanatory power of our models is relatively low, ranging from 15.1% to 27.3%.

To further analyse our results, we exclude year, country and sector fixed effects.^{12 13} Generally, this does not affect the statistical significance of our independent variables. One exception is the variable *AUDIT*, in the regression where Tobin's Q is used as a proxy for financial performance, where the coefficient becomes lower, and the statistical significance is at the 10% level instead of the 5% level. Also, the explanatory power of all regressions decreases, ranging from 7.6% to 21.7%.

¹² We also perform the regressions including each of the fixed effects separately. However, this does not provide any additional insights.

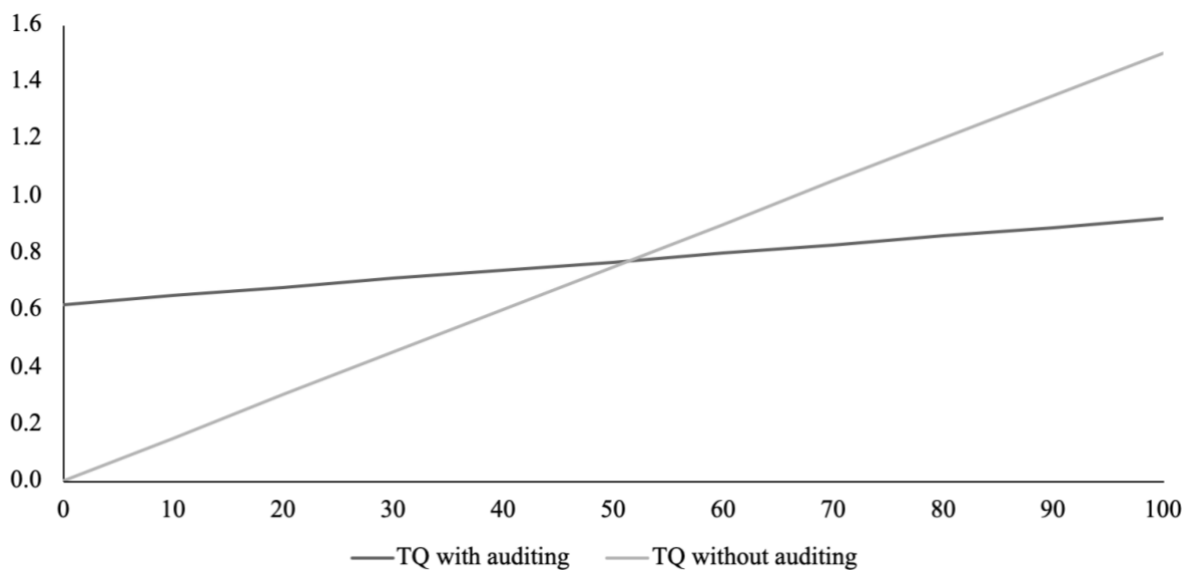
¹³ We also perform the regressions with different variations of control variables, fixed effects and robust standard errors (see appendix T-A.E).

Table 5. Regression, hypothesis 1

VARIABLES	TQ _t	TQ _t	ROA _t	ROA _t	RETURN _t	RETURN _t
CSR _{t-1}	0.015 (2.90)***	0.018 (3.03)***	0.000 (1.54)	0.000 (1.12)	0.001 (1.28)	0.001 (1.28)
AUDIT _{t-1}	0.618 (2.30)**	0.563 (1.87)*	0.006 (0.41)	-0.003 (-0.21)	0.045 (0.82)	0.045 (0.82)
CSR*AUDIT _{t-1}	-0.012 (-2.38)**	-0.012 (-1.98)**	-0.000 (-0.46)	-0.000 (-0.12)	-0.001 (-1.19)	-0.001 (-1.19)
SIZE _{t-1}	-0.219 (-7.72)***	-0.254 (-9.90)***	-0.007 (-5.20)***	-0.007 (-6.14)***	-0.007 (-2.04)**	-0.007 (-2.04)**
DA _{t-1}	-0.164 (-0.67)	-0.433 (-1.71)*	-0.051 (-4.10)***	-0.061 (-5.09)***	-0.037 (-1.07)	-0.037 (-1.07)
PB _{t-1}	0.036 (1.62)	0.041 (1.70)*	0.001 (1.59)	0.001 (1.72)*	-0.000 (-0.26)	-0.000 (-0.26)
Constant	5.465 (8.92)***	6.116 (10.30)***	0.194 (6.56)***	0.206 (7.75)***	0.212 (2.35)**	0.212 (2.35)**
<i>Year fixed effects</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>
<i>Country fixed effects</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>
<i>Sector fixed effects</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>
Observations	5,484	5,485	5,484	5,485	5,484	5,484
Adjusted R-squared	0.273	0.179	0.151	0.076	0.217	0.217

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1



The vertical axis represents the effect on Tobin's Q and the horizontal axis the CSR score.

Graph 1. Illustration of regression, hypothesis 1 (Tobin's Q)

5.3.2 The moderating effect of audit provider quality

In table 6, the results of the regressions testing our second hypothesis are presented, where we use accounting firms as a proxy for audit provider quality. From this, we observe a statistically significant positive coefficient of *CSR* and *ACC* at the 10% level, when we use Tobin's Q as a proxy for financial performance. However, the interaction term *CSR*ACC* is not statistically significant, which suggests a non-existing moderating effect of audit provider quality on the relationship between CSR and financial performance. This does not go in line with our second hypothesis. When using stock return as a proxy for financial performance, we observe a positive statistically significant coefficient of *CSR* and *ACC* at the 10% level and the 5% level, and a statistically significant slightly negative coefficient of *CSR*ACC* at the 5% level. This suggests that the total effect of having an accounting firm as auditor will be increasingly negative as the CSR score increases. As graph 2 illustrates, below a CSR score of ~70 the total effect of having an accounting firm, compared to a non-accounting firm, as auditor will be positive while above this score the total effect will be negative. Given that the mean CSR score in the sample is ~64 (see table 2), this result suggests that the total effect of auditing of CSR disclosure will generally be positive for the firms in our sample. When using return on assets as a proxy for financial performance, we cannot detect a statistically significant relationship between our independent variables and financial performance. For all three regressions, *SIZE* has a statistically significant negative effect on financial performance at the 1% level, which goes in line with previous research. For the regression using return on assets as a proxy for financial performance, we observe a statistically significant negative coefficient of *PB* at the 1% level, which also goes in line with our expectations.

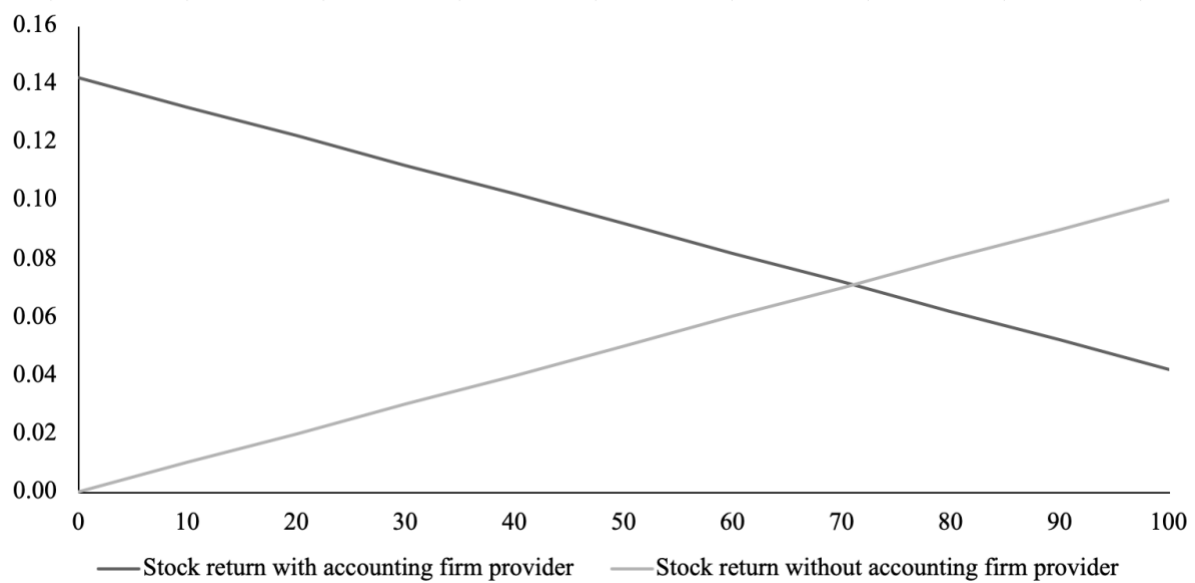
To further analyse our results, we exclude year, country and sector fixed effects. When using Tobin's Q as a proxy for financial performance, the statistical significance level of *CSR*, *ACC*, and *CSR*ACC* is higher, compared to when fixed effects are included. However, when using stock return as a proxy for financial performance, the statistical significance level of these variables is lower. The coefficients of the variables do not change in sign but slightly in magnitude. The explanatory power of the regression that uses stock return as a proxy for financial performance seems to be highly driven by the fixed effects, increasing it from 0.5% to 21.7%. The same holds for the other regressions as well. We also perform the regressions including each of the fixed effects separately. When stock return is used as a proxy for financial performance, the interaction term seems to be driven by year fixed effects the most.

Table 6. Regression, hypothesis 2 (accounting firms)

VARIABLES	TQ _t	TQ _t	ROA _t	ROA _t	RETURN _t	RETURN _t
CSR _{t-1}	0.008 (1.85)*	0.014 (3.05)***	0.000 (1.31)	0.000 (0.90)	0.001 (1.95)*	-0.000 (-0.01)
ACC _{t-1}	0.543 (1.83)*	0.714 (2.21)**	0.010 (0.64)	-0.003 (-0.21)	0.142 (2.52)**	0.099 (1.72)*
CSR*ACC _{t-1}	-0.007 (-1.48)	-0.010 (-2.04)**	-0.000 (-0.20)	0.000 (0.13)	-0.002 (-2.31)**	-0.001 (-1.63)
SIZE _{t-1}	-0.233 (-8.28)***	-0.258 (-9.82)***	-0.007 (-5.39)***	-0.007 (-5.72)***	-0.010 (-2.66)***	0.005 (1.60)
DA _{t-1}	0.030 (1.47)	-0.473 (-1.66)*	0.001 (1.44)	-0.058 (-4.20)***	-0.000 (-0.49)	-0.135 (-3.65)***
PB _{t-1}	-0.201 (-0.74)	0.035 (1.55)	-0.044 (-3.07)***	0.001 (1.56)	-0.059 (-1.55)	-0.000 (-0.55)
Constant	6.011 (9.61)***	6.271 (9.74)***	0.199 (6.89)***	0.203 (7.28)***	0.227 (2.64)***	-0.014 (-0.18)
<i>Year fixed effects</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>
<i>Country fixed effects</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>
<i>Sector fixed effects</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>
Observations	4,268	4,270	4,268	4,270	4,268	4,270
Adjusted R-squared	0.276	0.180	0.164	0.065	0.217	0.005

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1



The vertical axis represents the effect on stock return and the horizontal axis the CSR score.

Graph 2. Illustration of regression, hypothesis 2 (accounting firms)

When we use Big 4 firms as a proxy for audit provider quality, we observe different results.¹⁴ This is presented in table 7. Only when using stock return as a proxy for financial performance can we provide evidence of a statistically significant moderating effect of audit provider quality on the relationship between CSR and financial performance. However, as the coefficient of $CSR*B4$ is negative at the 10% level, this result contradicts our hypothesis. In addition to this, we observe that the coefficient of $B4$ is statistically significant and positive at the 5% level. As all three variables are not statistically significant, we cannot draw any conclusions about the interplay between CSR performance, audit provider quality and financial performance. For all three regressions, $SIZE$ has a statistically significant negative effect on financial performance, at the 1% level. For the regression using return on assets as a proxy for financial performance, DA also has a statistically significant negative effect at the 1% level. This goes in line with our expectations. Based on the results presented in table 6 and 7, testing the second hypothesis, we cannot draw any definitive conclusions about the moderating effect of audit provider quality on the relationship between CSR and financial performance.

To further analyse our results, we exclude year, country and sector fixed effects. Similar to when using accounting firms as a proxy for audit provider quality, we observe a higher statistical significance level for the variables CSR and $B4$ in the regression using Tobin's Q as a proxy for financial performance. Furthermore, for the regression that uses stock return as a proxy for financial performance, we observe a lower level of statistical significance level. For both these regressions the coefficient signs of the variables do not change, only some in magnitude. Furthermore, the explanatory power is lower compared to when fixed effects are included. We also perform the regressions including each of the fixed effects separately. When stock return is used as a proxy for financial performance, the interaction term seems to be driven by year fixed effects the most.

¹⁴ We also conduct a similar regression where we include ACC as a control group. However, the results do not significantly change (see appendix R).

Table 7. Regression, hypothesis 2 (Big 4 firms)

VARIABLES	TQ _t	TQ _t	ROA _t	ROA _t	RETURN _t	RETURN _t
CSR _{t-1}	0.006 (1.40)	0.011 (2.55)**	0.000 (1.37)	0.000 (1.14)	0.001 (1.33)	-0.000 (-0.60)
B4 _{t-1}	0.379 (1.36)	0.505 (1.72)*	0.009 (0.62)	0.000 (0.02)	0.106 (1.98)**	0.080 (1.43)
CSR*B4 _{t-1}	-0.004 (-0.99)	-0.007 (-1.46)	-0.000 (-0.18)	-0.000 (-0.02)	-0.001 (-1.66)*	-0.001 (-1.12)
SIZE _{t-1}	-0.233 (-8.31)***	-0.258 (-9.82)***	-0.007 (-5.40)***	-0.007 (-5.73)***	-0.010 (-2.66)***	0.005 (1.54)
DA _{t-1}	-0.203 (-0.74)	-0.478 (-1.67)*	-0.044 (-3.07)***	-0.058 (-4.20)***	-0.059 (-1.55)	-0.135 (-3.64)***
PB _{t-1}	0.030 (1.48)	0.035 (1.56)	0.001 (1.44)	0.001 (1.57)	-0.000 (-0.42)	-0.000 (-0.48)
Constant	6.170 (9.75)***	6.480 (9.92)***	0.201 (6.92)***	0.200 (7.23)***	0.263 (3.07)***	0.010 (0.13)
<i>Year fixed effects</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>
<i>Country fixed effects</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>
<i>Sector fixed effects</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>
Observations	4,267	4,269	4,267	4,269	4,267	4,269
Adjusted R-squared	0.275	0.179	0.164	0.065	0.216	0.005

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

5.3.3 The moderating effect of auditor independence

In table 8, the results of the regressions testing the third hypothesis are presented. This regression model provides only a few statistically significant findings. When using Tobin's Q as a proxy for financial performance, *AIND* has a statistically significant negative coefficient at the 10% level. However, neither *CSR* nor the interaction term *CSR*AIND* are statistically significant, which means that we cannot draw any conclusions about the interplay between *CSR* performance, auditor independence and financial performance. When using return on assets as a proxy for financial performance, the only statistically significant variable is *CSR*, which in turn does not indicate economic significance. Similarly, when stock return is used as a proxy for financial performance, none of the independent variables are statistically significant. For all three regressions, *SIZE* has a statistically significant negative effect on financial performance at the 1% level and for the regression using return on assets as a proxy for financial performance, *DA* also has a statistically significant negative effect at the 1% level.

In conclusion, these regressions do not provide any evidence that auditor independence moderates the relationship between CSR and financial performance.

To further analyse our results, we exclude year, country and sector fixed effects, which does not significantly change our results.¹⁵ When Tobin's Q is used as a proxy for financial performance, *CSR*AIND* turns statistically significant at the 5% level and the statistical significance level for *AIND* increases from the 10% to the 5% level. Furthermore, the coefficients change slightly in magnitude but not in sign. Also, *CSR* is statistically significant at the 1% level when stock return is used as a proxy for financial performance. However, the explanatory power is lower compared to when fixed effects are included, ranging from 0.4% to 18%.

Table 8: Regression, hypothesis 3

VARIABLES	TQ _t	TQ _t	ROA _t	ROA _t	RETURN _t	RETURN _t
CSR _{t-1}	0.001 (0.19)	0.003 (0.90)	0.000 (1.83)*	0.000 (1.67)*	-0.000 (-0.76)	-0.001 (-2.70)***
AIND _{t-1}	-0.399 (-1.66)*	-0.596 (-2.38)**	-0.003 (-0.21)	-0.002 (-0.16)	-0.064 (-1.39)	-0.049 (-1.01)
CSR*AIND _{t-1}	0.005 (1.51)	0.008 (2.25)**	-0.000 (-0.05)	0.000 (0.06)	0.001 (1.16)	0.001 (0.96)
SIZE _{t-1}	-0.231 (-8.29)***	-0.257 (-9.91)***	-0.007 (-5.31)***	-0.007 (-5.73)***	-0.009 (-2.44)**	0.006 (1.67)*
DA _{t-1}	-0.218 (-0.80)	-0.493 (-1.72)*	-0.044 (-3.08)***	-0.057 (-4.16)***	-0.061 (-1.61)	-0.138 (-3.73)***
PB _{t-1}	0.030 (1.48)	0.035 (1.56)	0.001 (1.43)	0.001 (1.57)	-0.000 (-0.30)	-0.000 (-0.41)
Constant	6.581 (10.42)***	7.085 (11.31)***	0.204 (6.84)***	0.201 (7.47)***	0.351 (4.08)***	0.081 (1.06)
<i>Year fixed effects</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>
<i>Country fixed effects</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>
<i>Sector fixed effects</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>
Observations	4,241	4,243	4,241	4,243	4,241	4,243
Adjusted R-squared	0.275	0.180	0.164	0.065	0.216	0.004

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

¹⁵ We also perform the regressions including each of the fixed effects separately. However, this does not provide any additional insights.

5.4 Robustness checks

To further test our results, we perform the regressions with firm fixed effects (see appendix G-J). Overall, the results remain similar when the effects are introduced. The coefficient signs of all previously statistically significant variables stay the same, but the size of the coefficients change slightly. Also, the statistical significance of the results is lower. When Tobin's Q is used as a proxy for financial performance, none of the independent variables in any of the regression models are statistically significant. Similarly, when using return on assets as a proxy for financial performance, almost none of the independent variables in any of the regression models are statistically significant. The only exception is the variable *CSR*, in the regression testing hypothesis one. Furthermore, when stock return is used as a proxy for financial performance, the variable *CSR* has a statistically significant negative coefficient at the 1% and the 5% level for all models, however none of the other independent variables are statistically significant.

Moreover, in all models, *SIZE* has a negative statistically significant effect at the 1% level, whereas *DA* has a positive statistically significant effect at the 1% level in the regressions using stock return as a proxy for financial performance. Also, the explanatory power significantly increases for the regressions using Tobin's Q and return on assets as proxies for financial performance. However, for the regressions using stock returns as a proxy for financial performance, the explanatory power decreases.

5.5 Additional analysis

5.5.1 Leading version of return of assets

Given that previous research suggests that social responsiveness may take time to transfer into greater financial returns (Brammer & Millington, 2008), which particularly may be true for accounting-based measures of financial performance, we conduct additional analysis that investigates this. More specifically, we perform our main regressions using leading versions of our dependent variable *ROA* (ROA_{t+1} , ROA_{t+2} , ROA_{t+3}), to see if auditing of CSR disclosure, audit provider quality and auditor independence, have a moderating effect on the relationship between CSR and financial performance in the longer run. However, we only find statistically significant results in the regression testing the first hypothesis. Like some of our main results, these results indicate that auditing of CSR disclosure has a slightly negative moderating effect on financial performance, which contradicts our hypothesis. This is statistically significant at

the 5% level for the models using $ROAt+2$ and $ROAt+3$ as a proxy for financial performance, suggesting that the effect of auditing takes time to transfer into profitability for the company. In line with the main results, the coefficients of *CSR* and *AUDIT* are positive. The interplay between CSR performance, auditing of CSR disclosure and financial performance is illustrated in graph 3 and 4. For the regressions testing hypotheses two and three, the results are insignificant and therefore not presented.

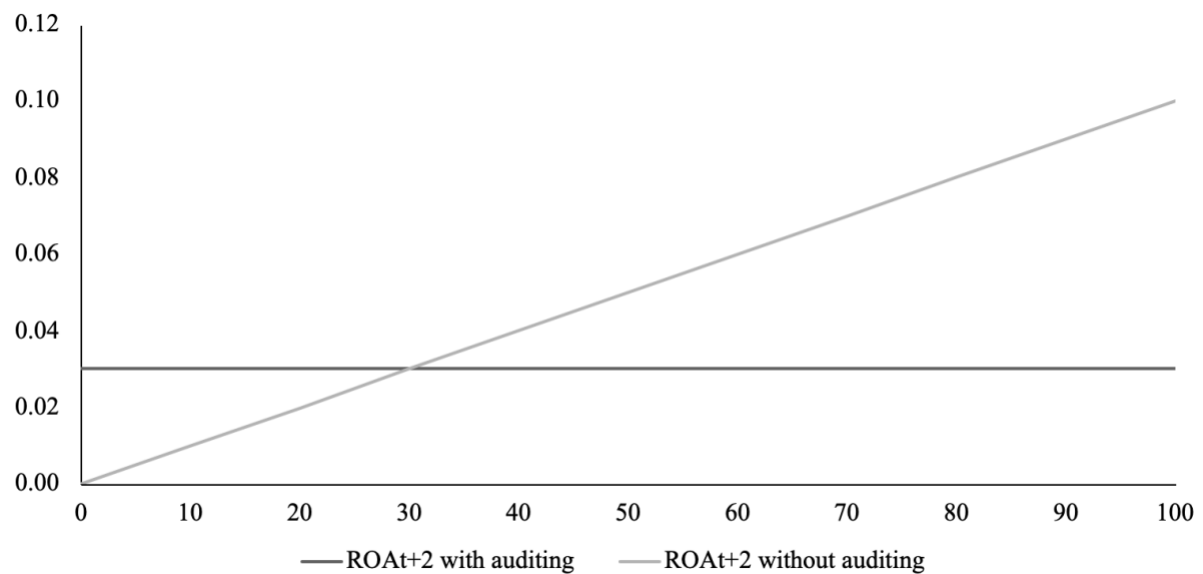
Anyhow, it should be noted that analysing the findings using a three-year leading version of return on assets may not be sufficient to capture a potential moderating effect of CSR disclosure quality. As a result, a ten-year leading version of return on assets may be more appropriate to guarantee that the CSR disclosure quality and CSR performance have enough time to transfer into financial returns. However, if doing this, the measure of return on assets will be far ahead in time relative to the rest of the variables, resulting in a lot of noise being present. This would make it difficult to capture the isolated effect of CSR disclosure quality and CSR performance, on financial performance. Also, this type of analysis would result in a significantly smaller sample. Therefore, we believe that the analysis we conduct is the most appropriate one.

Table 9. Regression, additional analysis leading ROA, hypothesis 1

VARIABLES	ROA _{t+1}	ROA _{t+2}	ROA _{t+3}
CSR _{t-1}	0.000 (1.73)*	0.001 (2.55)**	0.001 (2.64)***
AUDIT _{t-1}	0.009 (0.58)	0.030 (1.84)*	0.032 (1.77)*
CSR*AUDIT _{t-1}	-0.000 (-0.70)	-0.001 (-2.08)**	-0.001 (-2.16)**
SIZE _{t-1}	-0.009 (-5.95)***	-0.008 (-5.60)***	-0.008 (-5.20)***
DA _{t-1}	-0.024 (-1.76)*	-0.008 (-0.57)	-0.004 (-0.27)
PB _{t-1}	0.001 (1.52)	0.001 (1.51)	0.001 (1.41)
Constant	0.220 (7.09)***	0.201 (6.06)***	0.197 (5.27)***
<i>Year fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
<i>Country fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
<i>Sector fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Observations	4,363	3,517	2,837
Adjusted R-squared	0.161	0.177	0.189

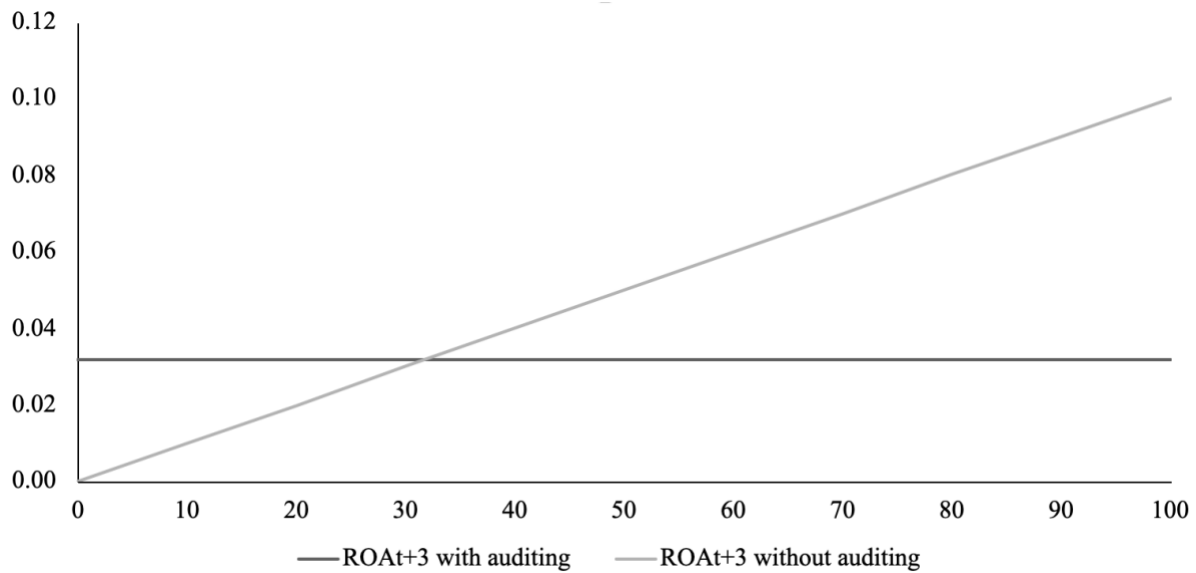
Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1



The vertical axis represents the effect on stock return and the horizontal axis the CSR score.

Graph 3. Illustration of regression, hypothesis 1, (ROAt+2)



The vertical axis represents the effect on stock return and the horizontal axis the CSR score.

Graph 4. Illustration of regression, hypothesis 1, (ROAt+3)

5.5.2 A binary classification of CSR performance

Furthermore, we examine whether our main results change when introducing a CSR score dummy variable instead of using the absolute CSR score. The CSR dummy variable takes the value 1 if a firm has a CSR score that is above the median in the sample (of ~66, see table 2), and the value 0 if the CSR score is below the median. Hence, we make a binary classification of firms with high and low CSR performance. This aims to investigate whether the interaction between CSR performance and CSR disclosure quality, and its effect on financial performance, changes when using a simpler measure of CSR performance. When using return on assets and stock return as proxies for financial performance, the results are insignificant. However, when using Tobin's Q as a proxy for financial performance some results are statistically significant and therefore explained below.

In tables 10 and 11, the results are presented. We observe that for the regression testing the first hypothesis, the coefficient of the interaction term is negative and statistically significant at the 10% level. Furthermore, the coefficient *CSR_DUMMY* is positive and statistically significant at the 5% level. This goes in line with our main results, however in that regression all the independent variables are statistically significant. The regression conducted to test the second hypothesis provides more statistically significant results than our main model. When using accounting firms as a proxy for audit provider quality, the coefficients of *CSR_DUMMY* and *ACC* are positive and statistically significant at the 10% and the 5% level respectively.

Furthermore, the coefficient of the interaction term CSR_D*ACC is negative and statistically significant at the 10% level. In the regression using Big 4 firms as a proxy for audit provider quality the coefficient of $B4$ is positive and statistically significant at the 5% level, which differs from the main model where none of the variables are statistically significant. Lastly, the regression testing the third hypothesis provides a statistically significant negative coefficient of $AIND$ and a statistically significant positive coefficient of the interaction term CSR_D*AIND , both at the 5% level. It suggests a positive moderating effect of auditor independence, which differs from the main result where these variables are insignificant.¹⁶

Table 10. Regression, additional analysis CSR dummy, hypothesis 1 (part 1)

VARIABLES	TQ _t	VARIABLES	TQ _t
CSR_D _{t-1}	0.349 (2.01)**	CSR_D _{t-1}	0.215 (1.71)*
AUDIT _{t-1}	0.061 (0.60)	ACC _{t-1}	0.224 (2.26)**
CSR_D*AUDIT _{t-1}	-0.325 (-1.87)*	CSR_D*ACC _{t-1}	-0.245 (-1.85)*
SIZE _{t-1}	-0.204 (-8.27)***	SIZE _{t-1}	-0.219 (-8.63)***
DA _{t-1}	-0.164 (-0.67)	DA _{t-1}	-0.197 (-0.72)
PB _{t-1}	0.036 (1.62)	PB _{t-1}	0.030 (1.48)
Constant	5.844 (10.04)***	Constant	6.126 (10.37)***
<i>Year fixed effects</i>	Yes	<i>Year fixed effects</i>	Yes
<i>Country fixed effects</i>	Yes	<i>Country fixed effects</i>	Yes
<i>Sector fixed effects</i>	Yes	<i>Sector fixed effects</i>	Yes
Observations	5,484	Observations	4,268
Adjusted R-squared	0.270	Adjusted R-squared	0.275

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

¹⁶ We also conduct a similar regression where we divide the sample in quartiles based on CSR score. However, the results are generally insignificant and do not provide additional insights (see appendix N-Q).

Table 11. Regression, additional analysis CSR dummy, hypothesis 1 (part 2)

VARIABLES	TQ _t	VARIABLES	TQ _t
CSR_D _{t-1}	0.165 (1.46)	CSR_D _{t-1}	-0.072 (-0.99)
B4 _{t-1}	0.204 (2.27)**	AIND _{t-1}	-0.162 (-2.15)**
CSR_D*B4 _{t-1}	-0.196 (-1.63)	CSR_D*AIND _{t-1}	0.198 (2.13)**
SIZE _{t-1}	-0.220 (-8.69)***	SIZE _{t-1}	-0.216 (-8.64)***
DA _{t-1}	-0.200 (-0.73)	DA _{t-1}	-0.221 (-0.81)
PB _{t-1}	0.030 (1.48)	PB _{t-1}	0.030 (1.48)
Constant	6.168 (10.38)***	Constant	6.314 (10.39)***
<i>Year fixed effects</i>	Yes	<i>Year fixed effects</i>	Yes
<i>Country fixed effects</i>	Yes	<i>Country fixed effects</i>	Yes
<i>Sector fixed effects</i>	Yes	<i>Sector fixed effects</i>	Yes
Observations	4,267	Observations	4,241
Adjusted R-squared	0.275	Adjusted R-squared	0.275

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

6. Discussion

The following section elaborates on the results presented in the section above. We identify and describe four different explanations for the presented results.

Summarising our results, it can be said that a majority of the results are insignificant and the statistically significant ones are relatively inconsistent and difficult to interpret. The statistically significant results suggest that CSR disclosure quality has a negative moderating effect except for when testing hypothesis three, the moderating effect of auditor independence. Accordingly, based on our findings we do not find evidence that supports the hypotheses that CSR disclosure quality has a positive moderating effect on the relationship between CSR and financial performance. We believe the potential explanations for these findings are the following: 1) there is no moderating effect of CSR disclosure quality, 2) CSR score is not an accurate proxy for CSR performance, 3) our sample does not accurately represent the actual population, 4) endogeneity.

The simple way to explain our results is that CSR disclosure quality does not moderate the relationship between CSR and financial performance. There are two potential reasons for this. The first one is that various factors of auditing do not contribute to improving the quality of the CSR disclosure. Hence, even if there is a link between CSR disclosure and CSR performance, there is no moderating effect of CSR disclosure quality. This goes in line with previous research that suggests that auditing does not result in better disclosure quality and is more of a symbolic action, rather than a corporate commitment to external transparency and accountability (Ball et al., 2000; Michelon et al., 2015; O'Dwyer & Owen, 2005). The other potential reason is that there is no link between CSR disclosure and CSR performance. Hence, even if auditing plays a role in improving the CSR disclosure quality, it does not have a spillover effect on CSR performance. It is important to note that both these two reasons assume that the CSR score is an accurate measure of firm's CSR performance.

Another potential explanation for our results is that our chosen proxy for CSR performance, Refinitiv Eikon's CSR score, does not accurately reflect a firm's true CSR performance. We believe this may be the case because prior research shows that there is usually disagreement about a company's CSR score across different rating agencies. Gibson Brandon et al. (2021) discover that, when using a sample of S&P 500 firms, the average pairwise correlation between the CSR scores of seven rating agencies is 0.45. This suggests that a firm's CSR score might

not be completely definite and that there is a risk that it may not accurately reflect true CSR performance. As a result, our prediction that the effect of CSR performance on financial performance will be stronger when considering a company's CSR disclosure quality will not be true in our study. This explanation would assume that if using a better suiting proxy for CSR performance, the interaction effect would be positive and statistically significant because it would more accurately reflect reality. However, this may slightly contradict previous research that finds statistically significant results when investigating the relationship between CSR score and financial performance (Albuquerque et al., 2019; Di Giuli & Kostovetsky, 2014; Lins et al., 2017). This could be explained by the fact that some rating agencies may provide CSR scores that reflect true CSR performance better than others. Another explanation is that the suitability of using CSR scores as a proxy for CSR performance may have decreased over time as CSR has become a more widespread phenomenon. This might have prompted firms to engage in CSR activities unrelated to their core operations in an effort to impress investors and other stakeholders, resulting in high CSR scores. However, as theory suggests, allocating corporate funds to CSR activities unrelated to a company's key stakeholders may not create value for shareholders (Hillman & Keim, 2001). This would explain the absence of a positive link between CSR and financial performance.

The third potential explanation for why our results are insignificant is that our sample may not correctly represent the population. This can be a result of lower data availability for smaller companies, causing us to drop observations where data is not available. If this is the case, our results may not contradict previous research that emphasises the relevance of auditing, but rather lose statistical significance due to a skewed sample. We believe this may be the case because the proportion of companies with audited CSR disclosure in our sample, 85.6%, is higher than the anticipated proportion in the population (KPMG, 2022). Furthermore, among the companies that have their CSR disclosure audited, the proportion of companies with a Big 4 firm or an accounting firm as audit provider (around 76-80%) is slightly higher compared to previous studies. The equivalent proportion in the study of Cuadrado-Ballesteros et al. (2017) is around 63.5%. However, these two findings may be explained by the fact that auditing of CSR disclosure has increased in popularity in recent years and that accounting firms have committed more resources to be able to offer these sorts of services.

A last potential explanation for our results is the presence of endogeneity, which is a common concern in corporate finance research. In simple terms, endogeneity can be explained as a non-

zero correlation between the explanatory variables and the error term in a regression. This results in biased and inconsistent parameter estimates, making it difficult to draw valid conclusions. Even if we use fixed effects to partially account for endogeneity, it is still an issue that may be present in our results. A specifically severe problem in corporate finance literature, which causes endogeneity, is omitted variables. This refers to variables that should be included in the vector of explanatory variables, but for a variety of reasons are not. Hence, if the omitted variables correlate with any of our explanatory variables, the OLS regression will produce inconsistent estimates of all of the elements of β (Whited & Roberts, 2013). Since our regression models produce rather inconsistent results, this may be seen as an indication of an endogeneity problem.

A potential omitted variable in our models is the focus of the management, which may be broadly categorised into those who are focused on creating benefits for themselves and those who are focused on creating benefits for their shareholders. This idea can be linked to a fundamental principle of the modern firm: the agency relationship between managers and shareholders. Because ownership and control are separated in modern firms, agency problems may occur because managers' and shareholders' interests are not necessarily aligned (Jensen & Meckling, 1976). Applying this concept to our study leads us to believe that it is possible that the management of companies with high CSR disclosure quality may be more concerned with maintaining their own reputation and generating managerial benefits, than with generating shareholder returns. Therefore, as a quick fix, the management of these firms may engage in CSR activities unrelated to core operations to strengthen their reputation and produce managerial benefits (Barnea & Rubin, 2010). However, as theory suggests, engaging in these types of CSR activities may not create shareholder returns (Hillman & Keim, 2001) which potentially could give rise to a negative omitted variable bias. To eliminate this bias, we would like to measure and control for the focus of management, but doing so empirically is very difficult. As a result, even though we are aware of this possible issue, we find it challenging to solve.

Another cause of endogeneity is simultaneity bias, which occurs when the dependent and one or more of the independent variables are determined in equilibrium, allowing it to be argued that either the independent causes the dependent or the dependent causes the independent (Whited & Roberts, 2013). This is relevant to discuss in relation to our results because we suspect that simultaneity bias may be present in our models. According to our results, CSR

performance often has a positive effect on financial performance. However, this may not necessarily imply that high CSR performance results in higher financial performance, but rather that high performing firms have enough resources to work with CSR. Simultaneously, CSR performance may affect financial performance. If this is the case, it would cause a positive bias in the estimated coefficient of CSR performance in our regression. The third cause of endogeneity is measurement error. The explanation of measurement error is found in the appendix (see appendix S), because we do not suspect that it is present in our regression models. We contend that this is the case since it would indicate that measurement errors in either our independent variables or our dependent variable, financial performance, would be correlated to any of the independent or dependent variables (Whited & Roberts, 2013), which is not believed to be very likely.

Based on the discussion given above, we believe the most plausible explanations for our results are that our sample may not accurately represent the population and that we may have endogeneity problems. We anticipate that we may have an issue with our sample as it differs some from prior research and seems to be tilted towards larger firms. Furthermore, because our results are rather inconsistent, we believe we may suffer from an omitted variable bias or simultaneity bias.

7. Concluding remarks, limitations and further research

This section concludes the paper and answers our research question. Furthermore, it presents the contributions of the study, limitations, and suggestions for further research.

Previous studies that examine the relationship between CSR and financial performance provide mixed results, where some indicate a positive link and others indicate a negative one (Albuquerque et al., 2019; Brammer & Millington, 2008; Di Giuli & Kostovetsky, 2014; Lins et al., 2017). This paper suggests that a possible reason for this is that the relationship is moderated by other factors. Given that CSR disclosures are increasingly used by investors and other stakeholders as a basis for decision making, but that greenwashing remains a concern, we examine whether CSR disclosure quality moderates the relationship between CSR and financial performance. By doing this, this paper combines the two concepts CSR disclosure and CSR performance. We propose that CSR disclosure quality is a result of three key factors: if the company has its CSR disclosure audited, if the audit is carried out by a high-quality audit provider and if the auditor is independent from the reporting company.

Overall, our results provide little evidence that CSR disclosure quality moderates the relationship between CSR and financial performance. Most of our results are insignificant and the few statistically significant findings are relatively inconsistent and difficult to interpret. The statistically significant results suggest that CSR disclosure quality has a negative moderating effect, except for when testing the moderating effect of auditor independence, hypothesis three. However, our findings cannot certainly provide evidence of a moderating effect of CSR disclosure quality.

We provide four potential explanations for our inconclusive findings. The first one is that CSR disclosure quality does not moderate the relationship between CSR and financial performance. There are two potential reasons for this, where the first one is that auditing does not contribute to improving the CSR disclosure quality. The other one is that there is no link between CSR disclosure and CSR performance. Hence, even if auditing plays a role in improving the CSR disclosure quality, it does not have a spillover effect on CSR performance. The second potential explanation for our results is that our chosen proxy for CSR performance, Refinitiv Eikon's CSR score, might not accurately reflect a firm's true CSR performance. The third potential explanation is that our sample may not correctly represent the population. This can be a result of lower data availability for smaller companies, causing us to drop observations where data is

not available. The fourth potential explanation is that we may have endogeneity problems. The causes of endogeneity that we found to be the most plausible are omitted variable bias and simultaneity bias.

This paper contributes to existing research in two main ways. Firstly, we extend previous literature by combining the concepts CSR disclosure and CSR performance, which to the best of our knowledge has not been done before. For example, previous research investigates the link between CSR disclosure and financial performance (Buchanan et al., 2018; Dhaliwal et al., 2011; Richardson & Welker, 2001) CSR performance and financial performance (Albuquerque et al., 2019; Di Giuli & Kostovetsky, 2014; Lins et al., 2017) and CSR disclosure quality and financial performance (Marshall et al., 2009), but do not combine the concepts as we do. Secondly, we contribute to existing research by investigating two relatively unexplored aspects of auditing of CSR disclosure: audit provider quality and auditor independence. These aspects have been investigated in the context of financial auditing (Becker et al., 1998; Boone et al., 2008; DeAngelo, 1981; Johnson et al., 2002; Palmrose, 1988; Watkins et al., 2004), but we bring it into the context of CSR. However, we find little evidence that CSR disclosure quality positively moderates the relationship between CSR and financial performance.

Our study has limitations, which we acknowledge. Firstly, we only examine companies listed in Europe for the last ten years. It can be the case that the effect of the rapid development within CSR can be hidden in our rather long timeframe. Furthermore, even if European companies are homogenous in some sense, the financial value of CSR may differ between these, which can make it difficult to draw a definitive conclusion. Another limitation is that we only use one proxy for CSR performance, the CSR score from Refinitiv Eikon. However, there are multiple providers of CSR scores that use different estimation practices, which might provide a more accurate representation of a firm's true CSR performance. Lastly, we do not incorporate how material different aspects of CSR are for firms. If we would do this, we may be able to capture a more accurate representation of a firm's CSR performance.

We have several suggestions for further research. Firstly, we recommend using different kinds of proxies for CSR performance. This can be accomplished by using a CSR score from another rating agency or combining scores from several rating agencies. Another suggestion is to use a different type of measure of CSR, such as the emissions of a firm. Furthermore, one could incorporate the materiality aspects of CSR to capture the relative importance of specific CSR topics for a firm. Also, one could introduce additional aspects of CSR disclosure quality, such

as the length and the complexity of a firm's disclosure. Moreover, it would be interesting to see how the new CSRD requirements, which will mandate companies to have their CSR disclosure audited, affect the role and use of auditing. Lastly, as our research only provides little evidence of the moderating role of CSR disclosure quality, we think that it may be appropriate to use alternative measures of CSR disclosure quality. While we only consider various elements that we think contribute to the quality of CSR disclosure, it would be interesting to investigate whether using audit quality measures, ideally the amount and magnitude of errors detected in the audit, would result in more definitive conclusions.

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Appendices

Appendix A

Variable definition

Variable	Code	Definition
<i>Dependent variables</i>		
Tobin's Q	TQ	Market value of equity plus book value of debt, over total assets
Stock return	RETURN	Percentage change in a firm's stock price from the beginning of the year to the end of the year
Return on assets	ROA	Net income over average total assets
<i>Independent variables</i>		
CSR performance	CSR	CSR score from Refinitiv Eikon, takes a value from 0 to 100
Audit	AUDIT	Dummy variable, takes the value 1 if the company has its CSR disclosure audited, 0 otherwise
Accounting firm provider	ACC	Dummy variable, takes the value 1 if the company has its CSR disclosure audited by an accounting firm, 0 otherwise
Big 4 firm provider	B4	Dummy variable, takes the value 1 if the company has its CSR disclosure audited by a Big 4 firm, 0 otherwise
Auditor independence	AIND	Dummy variable, takes the value 1 if the company has its CSR disclosure audited by an independent auditor, 0 otherwise. We consider an auditor to be independent if the company has different audit providers for its CSR and financial disclosures.
<i>Control variables</i>		
Firm size	SIZE	Natural logarithm of total assets
Debt to assets	DA	Total long-term debt over total assets
Price to book	PB	Market value of equity over book value of equity
Return on assets	ROA	Net income over total assets
<i>Fixed effects</i>		
Sector	SEC	NAICS sector
Country	COE	Country of exchange
Year	YEAR	Year

Appendix B

Descriptive data, observations per year

Year	N
2012	340
2013	317
2014	321
2015	356
2016	375
2017	404
2018	438
2019	516
2020	706
2021	833
2022	879
Total	5,485

Descriptive data, observations per sector

Sector	N
Accommodation and Food Services	78
Administrative and Support and Waste Management and Remediation Services	116
Agriculture, Forestry, Fishing and Hunting	15
Arts, Entertainment, and Recreation	27
Construction	278
Educational Services	3
Finance and Insurance	380
Health Care and Social Assistance	28
Information	418
Management of Companies and Enterprises	3
Manufacturing	2,224
Mining, Quarrying, and Oil and Gas Extraction	289
Other Services (except Public Administration)	9
Professional, Scientific, and Technical Services	277
Real Estate and Rental and Leasing	344
Retail Trade	297
Transportation and Warehousing	216
Utilities	388
Wholesale Trade	95
Total	5,485

Descriptive data, observations per country

Country	N
Austria	98
Belgium	100
Czech Republic	3
Denmark	126
Finland	238
France	907
Germany	645
Greece	64
Hungary	22
Iceland	5
Ireland; Republic of	24
Italy	359
Netherlands	223
Norway	127
Poland	56
Portugal	76
Romania	1
Russia	150
Spain	304
Sweden	580
Switzerland	305
United Kingdom	1,072
Total	5,485

Appendix C

OLS assumptions

The OLS regressions we use to test our models make several assumptions of the underlying data. This includes the absence of large outliers, that the residual has a mean of zero, that the observations are independently and identically distributed random variables, and that there is no perfect multicollinearity and homoscedasticity. We do several tests to check whether the assumptions hold as this will create the most efficient model with unbiased estimates. However, if these assumptions are violated the validity of the findings are reduced.

Appendix D

Shapiro Francia test for normality

Shapiro Francia tests the null hypothesis, stated to be that the distribution of the residuals in the regressions performed is normal. The results of the performed test shows that the null hypothesis can be rejected for all the performed regressions.

Variable	Obs	W'	V'	z	Prob>z
TQ - Audit	5,484	0.73964	828.755	17.118	0.00001
TQ - ACC	4,268	0.74370	646.481	16.235	0.00001
TQ - B4	4,267	0.74303	648.033	16.241	0.00001
TQ - AIND	4,241	0.74414	641.599	16.210	0.00001
ROA - Audit	5,484	0.92254	246.563	14.029	0.00001
ROA - ACC	4,268	0.92539	188.193	13.139	0.00001
ROA - B4	4,267	0.92523	188.561	13.144	0.00001
ROA - AIND	4,241	0.92480	188.560	13.139	0.00001
RETURN - Audit	5,484	0.97641	75.101	11.001	0.00001
RETURN - ACC	4,268	0.97566	61.384	10.329	0.00001
RETURN - B4	4,267	0.97539	62.065	10.356	0.00001
RETURN - AIND	4,241	0.97561	61.169	10.316	0.00001

Note: The normal approximation to the sampling distribution of W' is valid for $10 \leq n \leq 5000$.

Appendix E

VIF test to control for no perfect multicollinearity

The variance inflation factor (VIF) reflects the degree of multicollinearity in a study. Multicollinearity indicates the correlation between independent variables in a regression analysis. A low value of VIF indicates a low probability of multicollinearity. In a regression analysis, multicollinearity indicates the correlation between independent variables, where a low VIF value indicates a low probability of multicollinearity.

VIF TQ

Variable	VIF	1/VIF	Variable	VIF	1/VIF	Variable	VIF	1/VIF	Variable	VIF	1/VIF
CSR	7.93	0.126	CSR	5.53	0.181	CSR	4.52	0.221	CSR	2.53	0.395
Audit	15.92	0.063	ACC	20.85	0.048	B4	19.87	0.050	AIND	22.28	0.045
CSR*Audit	27.67	0.036	CSR*ACC	24.57	0.041	CSR*B4	23.65	0.042	CSR*AIND	22.51	0.044
SIZE	2.10	0.476	SIZE	2.04	0.490	SIZE	2.04	0.490	SIZE	2.02	0.494
DA	1.32	0.758	DA	1.30	0.768	DA	1.30	0.768	DA	1.30	0.769
PB	1.04	0.959	PB	1.04	0.959	PB	1.04	0.960	PB	1.04	0.960

VIF ROA

Variable	VIF	1/VIF	Variable	VIF	1/VIF	Variable	VIF	1/VIF	Variable	VIF	1/VIF
CSR	7.93	0.126	CSR	5.53	0.181	CSR	4.52	0.221	CSR	2.53	0.395
Audit	15.92	0.063	ACC	20.85	0.048	B4	19.87	0.050	AIND	22.28	0.045
CSR*Audit	27.67	0.036	CSR*ACC	24.57	0.041	CSR*B4	23.65	0.042	CSR*AIND	22.51	0.044
SIZE	2.10	0.476	SIZE	2.04	0.490	SIZE	2.04	0.490	SIZE	2.02	0.494
DA	1.32	0.758	DA	1.30	0.768	DA	1.30	0.768	DA	1.30	0.769
PB	1.04	0.959	PB	1.04	0.959	PB	1.04	0.960	PB	1.04	0.960

VIF RETURN

Variable	VIF	1/VIF	Variable	VIF	1/VIF	Variable	VIF	1/VIF	Variable	VIF	1/VIF
CSR	7.93	0.126	CSR	5.53	0.181	CSR	4.52	0.221	CSR	2.53	0.395
Audit	15.92	0.063	ACC	20.85	0.048	B4	19.87	0.050	AIND	22.28	0.045
CSR*Audit	27.67	0.036	CSR*ACC	24.57	0.041	CSR*B4	23.65	0.042	CSR*AIND	22.51	0.044
SIZE	2.10	0.476	SIZE	2.04	0.490	SIZE	2.04	0.490	SIZE	2.02	0.494
DA	1.32	0.758	DA	1.30	0.768	DA	1.30	0.768	DA	1.30	0.769
PB	1.04	0.959	PB	1.04	0.959	PB	1.04	0.960	PB	1.04	0.960

Appendix F

Breusch–Pagan/Cook–Weisberg test for homoscedasticity

Breusch Pagan tests the null hypothesis that the variance of the error terms is constant. For all our regressions we can reject the null hypothesis, which indicates the presence of heteroskedasticity. In our regressions we have therefore chosen to have clustered standard errors as this accounts for the presence of heteroskedasticity.

Variable	H0	chi2(1)	Prob > chi2
TQ - Audit	Constant variance	9,958.42	0.000
TQ - ACC	Constant variance	7,447.20	0.000
TQ - B4	Constant variance	7,449.12	0.000
TQ - AIND	Constant variance	7,464.35	0.000
ROA - Audit	Constant variance	987.27	0.000
ROA - ACC	Constant variance	479.07	0.000
ROA - B4	Constant variance	480.58	0.000
ROA - AIND	Constant variance	479.86	0.000
RETURN - Audit	Constant variance	17.35	0.000
RETURN - ACC	Constant variance	22.18	0.000
RETURN - B4	Constant variance	20.30	0.000
RETURN - AIND	Constant variance	22.26	0.000

Appendix G

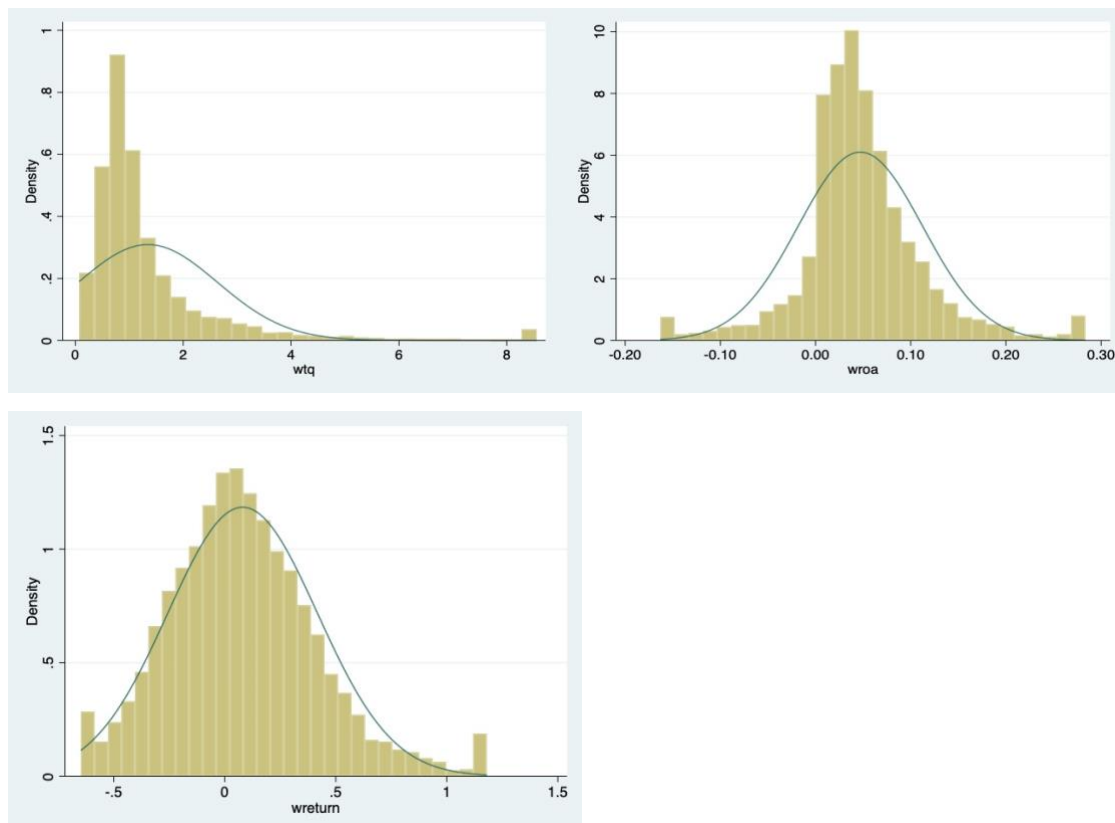
Wooldridge test for autocorrelation in panel data

Wooldridge test the null hypothesis that there is no autocorrelation. For all our regressions we can reject the null hypothesis, which indicates that autocorrelation exists.

Variable	H0	F	Prob > F
TQ - Audit	No first-order auto correlation	13.674	0.000
TQ - ACC	No first-order auto correlation	5.898	0.015
TQ - B4	No first-order auto correlation	6.318	0.012
TQ - AIND	No first-order auto correlation	5.540	0.019
ROA - Audit	No first-order auto correlation	36.343	0.000
ROA - ACC	No first-order auto correlation	55.113	0.000
ROA - B4	No first-order auto correlation	54.920	0.000
ROA - AIND	No first-order auto correlation	52.907	0.000
RETURN - Audit	No first-order auto correlation	55.644	0.000
RETURN - ACC	No first-order auto correlation	40.823	0.000
RETURN - B4	No first-order auto correlation	40.477	0.000
RETURN - AIND	No first-order auto correlation	38.526	0.000

Appendix H

Graphical illustration of the distribution of dependent variables



Appendix I

Regression with firm fixed effects, hypothesis 1

VARIABLES	TQ _t	ROA _t	RETURN _t
CSR _{t-1}	-0.001 (-0.36)	0.000 (1.81)*	-0.003 (-2.35)**
AUDIT _{t-1}	0.112 (0.70)	0.011 (0.79)	0.079 (0.83)
CSR*AUDIT _{t-1}	-0.000 (-0.01)	-0.000 (-0.91)	-0.002 (-1.14)
SIZE _{t-1}	-0.249 (-4.45)***	-0.038 (-6.22)***	-0.228 (-6.28)***
DA _{t-1}	0.047 (0.26)	-0.033 (-1.61)	0.438 (4.66)***
PB _{t-1}	0.003 (1.08)	0.000 (0.88)	-0.002 (-1.64)
Constant	6.992 (5.48)***	0.892 (6.61)***	5.509 (6.84)***
<i>Firm Fixed Effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Observations	5,289	5,289	5,289
Adjusted R-squared	0.845	0.539	0.057

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix J

Regression with firm fixed effects, hypothesis 2 (accounting firms)

VARIABLES	TQ _t	ROA _t	RETURN _t
CSR _{t-1}	-0.000 (-0.20)	0.000 (0.46)	-0.003 (-2.25)**
ACC _{t-1}	0.144 (0.93)	-0.008 (-0.43)	0.148 (1.50)
CSR*ACC _{t-1}	-0.001 (-0.53)	0.000 (0.50)	-0.002 (-1.46)
SIZE _{t-1}	-0.239 (-4.02)***	-0.036 (-5.11)***	-0.231 (-5.81)***
DA _{t-1}	0.165 (0.86)	-0.035 (-1.35)	0.466 (4.51)***
PB _{t-1}	0.002 (0.99)	0.000 (0.58)	-0.002 (-1.64)
Constant	6.763 (4.79)***	0.886 (5.45)***	5.571 (6.31)***
<i>Firm Fixed Effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Observations	4,130	4,130	4,130
Adjusted R-squared	0.850	0.512	0.056

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix K

Regression with firm fixed effects, hypothesis 2 (Big 4 firms)

VARIABLES	TQ _t	ROA _t	RETURN _t
CSR _{t-1}	-0.000 (-0.20)	0.000 (0.80)	-0.004 (-2.67)***
B4 _{t-1}	0.145 (1.01)	-0.002 (-0.14)	0.137 (1.39)
CSR*B4 _{t-1}	-0.001 (-0.63)	0.000 (0.15)	-0.002 (-1.29)
SIZE _{t-1}	-0.239 (-4.03)***	-0.036 (-5.09)***	-0.231 (-5.82)***
DA _{t-1}	0.164 (0.86)	-0.035 (-1.36)	0.467 (4.51)***
PB _{t-1}	0.002 (0.99)	0.000 (0.58)	-0.002 (-1.63)
Constant	6.768 (4.84)***	0.880 (5.47)***	5.590 (6.31)***
<i>Firm Fixed Effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Observations	4,128	4,128	4,128
Adjusted R-squared	0.850	0.512	0.056

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix L

Regression with firm fixed effects, hypothesis 3

VARIABLES	TQ _t	ROA _t	RETURN _t
CSR _{t-1}	-0.001 (-0.42)	0.000 (1.57)	-0.006 (-5.80)***
AIND _{t-1}	0.078 (0.53)	0.006 (0.52)	-0.094 (-1.40)
CSR*AIND _{t-1}	-0.001 (-0.66)	-0.000 (-0.87)	0.001 (1.32)
SIZE _{t-1}	-0.239 (-4.00)***	-0.037 (-5.39)***	-0.233 (-5.94)***
DA _{t-1}	0.159 (0.83)	-0.034 (-1.32)	0.471 (4.55)***
PB _{t-1}	0.002 (0.98)	0.000 (0.57)	-0.002 (-1.64)
Constant	6.845 (4.93)***	0.898 (5.79)***	5.770 (6.56)***
<i>Firm Fixed Effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Observations	4,101	4,101	4,101
Adjusted R-squared	0.849	0.514	0.057

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix M

Regression testing Tobin's Q without control variable price to book

In our regression models we use three different proxies for financial performance and include the same control variables in all of these. In the case of Tobin's Q there are some similarities with the control variable price to book as both are ratios that represent a company's relative valuation. Due to these similarities we test to exclude the control variable price to book in the regressions that use Tobin's Q as a proxy for financial performance, to ensure that no mechanical relationship exists between these two. These indicate no significant change from the regression including the control. The only difference is in the model testing accounting firms as a proxy for audit provider quality. In this regression the significance level increase to the 5% level for the effect regarding CSR and ACC and the interaction term CSR*ACC is significant at the 10% level. However, the coefficients do not change signs and are similar in magnitude to the ones in our main model where price to book is included. We therefore conclude that since previous research within the field of CSR and financial performance has found this to be a proper measure and that the relationship between these variables do not affect our model in a significant way, we find it relevant to control for price to book in our main model.

VARIABLES	TQ _t /AUDIT _{t-1}	TQ _t /ACC _{t-1}	TQ _t /B4 _{t-1}	TQ _t /AIND _{t-1}
CSR _{t-1}	0.016 (2.96)***	0.010 (2.11)**	0.007 (1.60)	0.000 (0.15)
XXX _{t-1}	0.649 (2.28)**	0.670 (2.11)**	0.466 (1.57)	-0.438 (-1.71)*
CSR*XXX _{t-1}	-0.012 (-2.36)**	-0.009 (-1.77)*	-0.005 (-1.22)	0.006 (1.59)
SIZE _{t-1}	-0.228 (-8.05)***	-0.240 (-8.46)***	-0.239 (-8.48)***	-0.238 (-8.43)***
DA _{t-1}	-0.110 (-0.42)	-0.146 (-0.50)	-0.149 (-0.51)	-0.165 (-0.56)
Constant	5.711 (9.40)***	6.129 (10.17)***	6.319 (10.25)***	6.807 (10.83)***
<i>Year fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
<i>Country fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
<i>Sector fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Observations	5,484	4,268	4,267	4,241
Adjusted R-squared	0.221	0.230	0.229	0.229

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix N

Regression with CSR score quartiles, hypothesis 1

VARIABLES	TQ _t	ROA _t	RETURN _t
CSRq2 _{t-1}	0.251 (1.31)	0.001 (0.07)	0.014 (0.47)
CSRq3 _{t-1}	0.354 (1.50)	-0.002 (-0.18)	0.040 (1.16)
CSRq4 _{t-1}	0.708 (1.61)	0.026 (1.54)	-0.002 (-0.07)
Audit _{t-1}	0.103 (1.33)	0.002 (0.37)	-0.006 (-0.24)
CSRq1*Audit _{t-1}	-0.021 (-0.14)	-0.005 (-0.88)	0.004 (0.15)
CSRq2*Audit _{t-1}	-0.222 (-1.16)	0.004 (0.43)	-0.020 (-0.58)
CSRq3*Audit _{t-1}	-0.317 (-1.43)	0.005 (0.54)	-0.044 (-1.17)
CSRq4*Audit _{t-1}	-0.645 (-1.53)	-0.022 (-1.36)	0.001 (0.04)
SIZE _{t-1}	-0.209 (-7.91)***	-0.007 (-5.20)***	-0.006 (-1.83)*
DA _{t-1}	-0.165 (-0.68)	-0.052 (-4.15)***	-0.036 (-1.04)
PB _{t-1}	0.036 (1.62)	0.001 (1.60)	-0.000 (-0.24)
Constant	5.918 (9.92)***	0.203 (7.00)***	0.244 (3.12)***
<i>Year fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
<i>Country fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
<i>Sector fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Observations	5,484	5,484	5,484
Adjusted R-squared	0.271	0.151	0.217

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix O

Regression with CSR score quartiles, hypothesis 2 (accounting firms)

VARIABLES	TQ _t	ROA _t	RETURN _t
CSRq2 _{t-1}	0.140 (1.18)	0.012 (1.53)	0.041 (1.11)
CSRq3 _{t-1}	0.315 (1.85)*	0.008 (0.86)	0.005 (0.15)
CSRq4 _{t-1}	0.279 (1.54)	0.013 (1.37)	0.070 (2.16)**
ACC _{t-1}	0.017 (0.11)	0.004 (0.49)	-0.022 (-1.15)
CSRq1*ACC _{t-1}	0.258 (1.35)	0.005 (0.51)	0.087 (2.48)**
CSRq2*ACC _{t-1}	0.156 (0.96)	0.002 (0.20)	0.027 (0.81)
CSRq3*ACC _{t-1}	-0.080 (-0.54)	0.006 (0.74)	0.074 (2.26)**
CSRq4*ACC _{t-1}	-	-	-
SIZE _{t-1}	-0.225 (-8.46)***	-0.007 (-5.31)***	-0.010 (-2.71)***
DA _{t-1}	-0.200 (-0.73)	-0.044 (-3.12)***	-0.060 (-1.58)
PB _{t-1}	0.030 (1.48)	0.001 (1.44)	-0.000 (-0.56)
Constant	6.187 (10.13)***	0.200 (6.75)***	0.294 (3.42)***
<i>Year fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
<i>Country fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
<i>Sector fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Observations	4,268	4,268	4,268
Adjusted R-squared	0.275	0.164	0.217

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix P

Regression with CSR score quartiles, hypothesis 2 (Big 4 firms)

VARIABLES	TQ _t	ROA _t	RETURN _t
CSRq2 _{t-1}	0.082 (0.74)	0.010 (1.34)	0.015 (0.42)
CSRq3 _{t-1}	0.231 (1.53)	0.006 (0.70)	-0.014 (-0.46)
CSRq4 _{t-1}	0.194 (1.17)	0.012 (1.39)	0.052 (1.85)*
B4 _{t-1}	0.048 (0.34)	0.002 (0.34)	-0.021 (-1.25)
CSRq1*B4 _{t-1}	0.171 (0.98)	0.004 (0.45)	0.068 (2.13)**
CSRq2*B4 _{t-1}	0.133 (0.89)	0.004 (0.45)	0.039 (1.29)
CSRq3*B4 _{t-1}	-0.082 (-0.62)	0.008 (1.07)	0.079 (2.69)***
CSRq4*B4 _{t-1}	-	-	-
SIZE _{t-1}	-0.226 (-8.52)***	-0.007 (-5.35)***	-0.011 (-2.79)***
DA _{t-1}	-0.201 (-0.74)	-0.044 (-3.12)***	-0.060 (-1.56)
PB _{t-1}	0.030 (1.48)	0.001 (1.44)	-0.000 (-0.51)
Constant	6.252 (10.18)***	0.202 (6.83)***	0.317 (3.70)***
<i>Year fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
<i>Country fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
<i>Sector fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Observations	4,267	4,267	4,267
Adjusted R-squared	0.275	0.164	0.216

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix Q

Regression with CSR score quartiles, hypothesis 3

VARIABLES	TQ _t	ROA _t	RETURN _t
CSRq2 _{t-1}	0.006 (0.05)	0.012 (2.11)**	-0.027 (-1.19)
CSRq3 _{t-1}	-0.095 (-0.82)	0.013 (2.13)**	-0.007 (-0.34)
CSRq4 _{t-1}	-0.029 (-0.24)	0.010 (1.69)*	-0.019 (-0.90)
AIND _{t-1}	-0.003 (-0.04)	-0.001 (-0.22)	-0.001 (-0.04)
CSRq1*AIND _{t-1}	-0.224 (-1.63)	0.002 (0.20)	-0.038 (-1.41)
CSRq2*AIND _{t-1}	-0.101 (-0.87)	-0.004 (-0.60)	0.008 (0.33)
CSRq3*AIND _{t-1}	0.085 (0.95)	-0.006 (-1.12)	-0.030 (-1.28)
CSRq4*AIND _{t-1}	-	-	-
SIZE _{t-1}	-0.222 (-8.45)***	-0.007 (-5.32)***	-0.010 (-2.49)**
DA _{t-1}	-0.222 (-0.81)	-0.044 (-3.11)***	-0.061 (-1.59)
PB _{t-1}	0.030 (1.48)	0.001 (1.43)	-0.000 (-0.34)
Constant	6.433 (10.24)***	0.204 (6.82)***	0.344 (3.92)***
<i>Year fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
<i>Country fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
<i>Sector fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Observations	4,241	4,241	4,241
Adjusted R-squared	0.275	0.164	0.216

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix R

Regression testing audit provider quality proxied by Big 4 firms, but controlling for accounting firms

VARIABLES	TQ _t	ROA _t	RETURN _t
CSR _{t-1}	0.008 (1.86)*	0.000 (1.31)	0.001 (1.97)**
B4 _{t-1}	-0.269 (-0.47)	0.006 (0.26)	-0.039 (-0.35)
ACC _{t-1}	0.805 (1.29)	0.004 (0.16)	0.181 (1.55)
CSR*B4 _{t-1}	0.007 (0.81)	-0.000 (-0.12)	0.001 (0.69)
CSR*ACC _{t-1}	-0.013 (-1.44)	-0.000 (-0.03)	-0.003 (-1.64)
SIZE _{t-1}	-0.234 (-8.31)***	-0.007 (-5.39)***	-0.011 (-2.72)***
DA _{t-1}	-0.199 (-0.73)	-0.044 (-3.07)***	-0.058 (-1.53)
PB _{t-1}	0.030 (1.47)	0.001 (1.44)	-0.000 (-0.47)
Constant	6.031 (9.64)***	0.199 (6.90)***	0.231 (2.69)***
<i>Year fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
<i>Country fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
<i>Industry fixed effects</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Observations	4,267	4,267	4,267
Adjusted R-squared	0.276	0.164	0.216

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix S

Explanation of measurement error as a cause of endogeneity

Measurement error is a common problem in corporate finance research where proxies are used for unobservable or difficult-to-measure variables, resulting in discrepancy between the true variable and the proxy. These imperfect measurements of variables cause the measurement error to be included in the regression error. Unsurprisingly, the statistical characteristics of this mistake play a critical role in determining how it affects coefficient estimates. If the measurement error in the dependent variables is correlated with any of the independent variables, it will result in inconsistent estimates of all of the β . Respectively, if the measurement error in the independent variable is correlated with any of the explanatory variables (Whited & Roberts, 2013).

Appendix T

Regression hypothesis 1, Tobin's Q

VARIABLES	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t
CSR _{t-1}	-0.006	-0.008	-0.006	-0.008	0.012	0.008	0.012	0.008	0.018	0.015	0.018
	(-5.68)***	(-7.62)***	(-2.76)***	(-3.80)***	(4.16)***	(3.13)***	(1.81)*	(1.57)	(6.72)***	(5.67)***	(3.03)***
AUDIT _{t-1}					0.888	0.881	0.888	0.881	0.563	0.618	0.563
					(4.80)***	(5.13)***	(2.52)**	(2.89)***	(3.32)***	(3.82)***	(1.87)*
CSR*AUDIT _{t-1}					-0.020	-0.018	-0.020	-0.018	-0.012	-0.012	-0.012
					(-6.25)***	(-6.22)***	(-2.85)***	(-3.20)***	(-3.96)***	(-4.23)***	(-1.98)**
SIZE _{t-1}									-0.254	-0.219	-0.254
									(-22.85)***	(-17.18)***	(-9.90)***
DA _{t-1}									-0.433	-0.164	-0.433
									(-4.00)***	(-1.41)	(-1.71)*
PB _{t-1}									0.041	0.036	0.041
									(21.76)***	(19.63)***	(1.70)*
Constant	1.715	1.827	1.715	1.827	0.894	1.050	0.894	1.050	6.116	5.465	6.116
	(24.14)***	(26.90)***	(11.80)***	(13.06)***	(5.37)***	(6.79)***	(2.71)***	(3.74)***	(22.23)***	(18.41)***	(10.30)***
Year fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Country fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Industry fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Firm Cluster	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes
Observations	5,485	5,484	5,485	5,484	5,485	5,484	5,485	5,484	5,485	5,484	5,485
Adjusted R-squared	0.006	0.171	0.006	0.171	0.016	0.178	0.016	0.178	0.179	0.273	0.179

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix U

Regression hypothesis 1, return on assets

VARIABLES	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t
CSR _{t-1}	-0.000	-0.000	-0.000	-0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(-3.15)***	(-2.48)**	(-1.89)*	(-1.49)	(0.92)	(1.08)	(0.53)	(0.65)	(1.86)*	(2.51)**	(1.12)
AUDIT _{t-1}					0.007	0.013	0.007	0.013	-0.003	0.006	-0.003
					(0.72)	(1.45)	(0.46)	(0.92)	(-0.31)	(0.61)	(-0.21)
CSR*AUDIT _{t-1}					-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
					(-1.83)*	(-2.01)**	(-1.08)	(-1.22)	(-0.18)	(-0.70)	(-0.12)
SIZE _{t-1}									-0.007	-0.007	-0.007
									(-11.73)***	(-9.92)***	(-6.14)***
DA _{t-1}									-0.061	-0.051	-0.061
									(-10.13)***	(-7.78)***	(-5.09)***
PB _{t-1}									0.001	0.001	0.001
									(12.73)***	(11.39)***	(1.72)*
Constant	0.057	0.055	0.057	0.055	0.048	0.042	0.048	0.042	0.206	0.194	0.206
	(15.50)***	(14.94)***	(9.24)***	(8.84)***	(5.51)***	(5.04)***	(3.48)***	(3.15)***	(13.59)***	(11.65)***	(7.75)***
Year fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Country fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Industry fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Firm Cluster	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes
Observations	5,485	5,484	5,485	5,484	5,485	5,484	5,485	5,484	5,485	5,484	5,485
Adjusted R-squared	0.002	0.103	0.002	0.103	0.005	0.104	0.005	0.104	0.076	0.151	0.076

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix V

Regression hypothesis 1, stock return

VARIABLES	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t
CSR _{t-1}	-0.001	-0.000	-0.001	-0.000	0.001	0.001	0.001	0.001	0.000	0.001	0.001
	(-2.05)**	(-1.29)	(-1.92)*	(-1.17)	(1.00)	(1.18)	(0.90)	(1.00)	(0.56)	(1.49)	(1.28)
AUDIT _{t-1}					0.045	0.051	0.045	0.051	0.054	0.045	0.045
					(0.92)	(1.17)	(0.78)	(0.94)	(1.10)	(1.02)	(0.82)
CSR*AUDIT _{t-1}					-0.001	-0.001	-0.001	-0.001	-0.002	-0.001	-0.001
					(-1.63)	(-1.66)*	(-1.45)	(-1.40)	(-1.82)*	(-1.41)	(-1.19)
SIZE _{t-1}									0.009	-0.007	-0.007
									(2.87)***	(-2.03)**	(-2.04)**
DA _{t-1}									-0.126	-0.037	-0.037
									(-4.05)***	(-1.16)	(-1.07)
PB _{t-1}									-0.000	-0.000	-0.000
									(-0.43)	(-0.23)	(-0.26)
Constant	0.126	0.111	0.126	0.111	0.078	0.062	0.078	0.062	-0.083	0.212	0.212
	(6.76)***	(6.40)***	(6.05)***	(5.59)***	(1.77)*	(1.57)	(1.50)	(1.25)	(-1.04)	(2.63)***	(2.35)**
Year fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Country fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Industry fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Firm Cluster	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes
Observations	5,485	5,484	5,485	5,484	5,485	5,484	5,485	5,484	5,485	5,484	5,484
Adjusted R-squared	0.001	0.216	0.001	0.216	0.002	0.217	0.002	0.217	0.006	0.217	0.217

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix W

Regression hypothesis 2, (accounting firms) Tobin's Q

VARIABLES	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t
CSR _{t-1}	-0.006	-0.008	-0.006	-0.008	0.004	-0.004	0.004	-0.004	0.014	0.008	0.014
	(-5.68)***	(-7.62)***	(-2.76)***	(-3.80)***	(1.46)	(-1.72)*	(0.76)	(-0.95)	(5.82)***	(3.36)***	(3.05)***
ACC _{t-1}					0.970	0.543	0.970	0.543	0.714	0.543	0.714
					(4.90)***	(2.89)***	(2.64)***	(1.65)*	(3.94)***	(3.07)***	(2.21)**
CSR*ACC _{t-1}					-0.015	-0.008	-0.015	-0.008	-0.010	-0.007	-0.010
					(-5.13)***	(-2.83)***	(-2.70)***	(-1.54)	(-3.77)***	(-2.62)***	(-2.04)**
SIZE _{t-1}									-0.258	-0.233	-0.258
									(-21.33)***	(-16.83)***	(-9.82)***
DA _{t-1}									-0.473	-0.201	-0.473
									(-3.97)***	(-1.58)	(-1.66)*
PB _{t-1}									0.035	0.030	0.035
									(18.36)***	(16.30)***	(1.55)
Constant	1.715	1.827	1.715	1.827	1.055	1.540	1.055	1.540	6.271	6.011	6.271
	(24.14)***	(26.90)***	(11.80)***	(13.06)***	(6.04)***	(9.28)***	(3.28)***	(5.40)***	(21.70)***	(19.61)***	(9.74)***
Year fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Country fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Industry fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Firm Cluster	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes
Observations	5,485	5,484	5,485	5,484	4,270	4,268	4,270	4,268	4,270	4,268	4,270
Adjusted R-squared	0.006	0.171	0.006	0.171	0.016	0.178	0.016	0.178	0.180	0.276	0.180

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix X

Regression hypothesis 2, (accounting firms) return on assets

VARIABLES	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t
CSR _{t-1}	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	0.000	0.000	0.000
	(-3.15)***	(-2.48)**	(-1.89)*	(-1.49)	(-0.41)	(-0.74)	(-0.26)	(-0.48)	(1.47)	(2.11)**	(0.90)
ACC _{t-1}					0.006	0.011	0.006	0.011	-0.003	0.010	-0.003
					(0.57)	(1.05)	(0.37)	(0.69)	(-0.32)	(0.97)	(-0.21)
CSR*ACC _{t-1}					-0.000	-0.000	-0.000	-0.000	0.000	-0.000	0.000
					(-0.86)	(-0.58)	(-0.56)	(-0.38)	(0.19)	(-0.30)	(0.13)
SIZE _{t-1}									-0.007	-0.007	-0.007
									(-10.16)***	(-9.45)***	(-5.72)***
DA _{t-1}									-0.058	-0.044	-0.058
									(-8.60)***	(-5.99)***	(-4.20)***
PB _{t-1}									0.001	0.001	0.001
									(10.32)***	(8.76)***	(1.56)
Constant	0.057	0.055	0.057	0.055	0.051	0.047	0.051	0.047	0.203	0.199	0.203
	(15.50)***	(14.94)***	(9.24)***	(8.84)***	(5.42)***	(5.17)***	(3.30)***	(3.45)***	(12.36)***	(11.38)***	(7.28)***
Year fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Country fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Industry fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Firm Cluster	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes
Observations	5,485	5,484	5,485	5,484	4,270	4,268	4,270	4,268	4,270	4,268	4,270
Adjusted R-squared	0.002	0.103	0.002	0.103	0.001	0.124	0.001	0.124	0.065	0.164	0.065

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix Y

Regression hypothesis 2, (accounting firms) stock return

VARIABLES	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t
CSR _{t-1}	-0.001	-0.000	-0.001	-0.000	0.000	0.001	0.000	0.001	-0.000	0.001	-0.000
	(-2.05)**	(-1.29)	(-1.92)*	(-1.17)	(0.39)	(1.30)	(0.36)	(1.20)	(-0.01)	(2.11)**	(-0.01)
ACC _{t-1}					0.101	0.137	0.101	0.137	0.099	0.142	0.099
					(1.89)*	(2.77)***	(1.71)*	(2.43)**	(1.84)*	(2.86)***	(1.72)*
CSR*ACC _{t-1}					-0.001	-0.002	-0.001	-0.002	-0.001	-0.002	-0.001
					(-1.66)*	(-2.46)**	(-1.58)	(-2.25)**	(-1.67)*	(-2.49)**	(-1.63)
SIZE _{t-1}									0.005	-0.010	0.005
									(1.50)	(-2.67)***	(1.60)
DA _{t-1}									-0.135	-0.059	-0.135
									(-3.83)***	(-1.64)	(-3.65)***
PB _{t-1}									-0.000	-0.000	-0.000
									(-0.41)	(-0.42)	(-0.55)
Constant	0.126	0.111	0.126	0.111	0.059	0.017	0.059	0.017	-0.014	0.227	-0.014
	(6.76)***	(6.40)***	(6.05)***	(5.59)***	(1.24)	(0.38)	(1.10)	(0.34)	(-0.17)	(2.65)***	(-0.18)
Year fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Country fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Industry fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Firm Cluster	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes
Observations	5,485	5,484	5,485	5,484	4,270	4,268	4,270	4,268	4,270	4,268	4,270
Adjusted R-squared	0.001	0.216	0.001	0.216	0.001	0.215	0.001	0.215	0.005	0.217	0.005

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix Z

Regression hypothesis 2, (Big 4 firms) Tobin's Q

VARIABLES	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t	TQ _t
CSR _{t-1}	-0.006	-0.008	-0.006	-0.008	0.000	-0.006	0.000	-0.006	0.011	0.006	0.011
	(-5.68)***	(-7.62)***	(-2.76)***	(-3.80)***	(0.02)	(-2.92)***	(0.01)	(-1.52)	(5.00)***	(2.64)***	(2.55)**
B4 _{t-1}					0.740	0.392	0.740	0.392	0.505	0.379	0.505
					(4.05)***	(2.28)**	(2.20)**	(1.27)	(3.03)***	(2.35)**	(1.72)*
CSR*B4 _{t-1}					-0.011	-0.005	-0.011	-0.005	-0.007	-0.004	-0.007
					(-4.06)***	(-2.12)**	(-2.17)**	(-1.15)	(-2.67)***	(-1.76)*	(-1.46)
SIZE _{t-1}									-0.258	-0.233	-0.258
									(-21.36)***	(-16.83)***	(-9.82)***
DA _{t-1}									-0.478	-0.203	-0.478
									(-4.01)***	(-1.59)	(-1.67)*
PB _{t-1}									0.035	0.030	0.035
									(18.46)***	(16.38)***	(1.56)
Constant	1.715	1.827	1.715	1.827	1.282	1.685	1.282	1.685	6.480	6.170	6.480
	(24.14)***	(26.90)***	(11.80)***	(13.06)***	(8.29)***	(11.57)***	(4.14)***	(6.06)***	(23.15)***	(20.57)***	(9.92)***
Year fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Country fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Industry fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Firm Cluster	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes
Observations	5,485	5,484	5,485	5,484	4,269	4,267	4,269	4,267	4,269	4,267	4,269
Adjusted R-squared	0.006	0.171	0.006	0.171	0.013	0.178	0.013	0.178	0.179	0.275	0.179

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix A.A

Regression hypothesis 2, (Big 4 firms) return on assets

VARIABLES	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t
CSR _{t-1}	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	0.000	0.000	0.000
	(-3.15)***	(-2.48)**	(-1.89)*	(-1.49)	(-0.49)	(-0.93)	(-0.31)	(-0.59)	(1.82)*	(2.21)**	(1.14)
B4 _{t-1}					0.008	0.010	0.008	0.010	0.000	0.009	0.000
					(0.85)	(1.06)	(0.56)	(0.69)	(0.03)	(0.95)	(0.02)
CSR*B4 _{t-1}					-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
					(-0.96)	(-0.60)	(-0.65)	(-0.39)	(-0.02)	(-0.28)	(-0.02)
SIZE _{t-1}									-0.007	-0.007	-0.007
									(-10.19)***	(-9.45)***	(-5.73)***
DA _{t-1}									-0.058	-0.044	-0.058
									(-8.59)***	(-5.98)***	(-4.20)***
PB _{t-1}									0.001	0.001	0.001
									(10.32)***	(8.79)***	(1.57)
Constant	0.057	0.055	0.057	0.055	0.049	0.049	0.049	0.049	0.200	0.201	0.200
	(15.50)***	(14.94)***	(9.24)***	(8.84)***	(5.98)***	(6.08)***	(3.70)***	(3.92)***	(12.62)***	(11.74)***	(7.23)***
Year fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Country fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Industry fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Firm Cluster	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes
Observations	5,485	5,484	5,485	5,484	4,269	4,267	4,269	4,267	4,269	4,267	4,269
Adjusted R-squared	0.002	0.103	0.002	0.103	0.001	0.124	0.001	0.124	0.065	0.164	0.065

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix A.B

Regression hypothesis 2, (Big 4 firms) stock return

VARIABLES	RETURN _{it}	RETURN _{it}	RETURN _{it}	RETURN _{it}	RETURN _{it}	RETURN _{it}	RETURN _{it}	RETURN _{it}	RETURN _{it}	RETURN _{it}	RETURN _{it}
CSR _{t-1}	-0.001 (-2.05)**	-0.000 (-1.29)	-0.001 (-1.92)*	-0.000 (-1.17)	-0.000 (-0.30)	0.000 (0.57)	-0.000 (-0.26)	0.000 (0.51)	-0.000 (-0.66)	0.001 (1.47)	-0.000 (-0.60)
B4 _{t-1}					0.080 (1.62)	0.104 (2.30)**	0.080 (1.41)	0.104 (1.92)*	0.080 (1.61)	0.106 (2.35)**	0.080 (1.43)
CSR*B4 _{t-1}					-0.001 (-1.16)	-0.001 (-1.87)*	-0.001 (-1.05)	-0.001 (-1.65)*	-0.001 (-1.21)	-0.001 (-1.87)*	-0.001 (-1.12)
SIZE _{t-1}									0.005 (1.46)	-0.010 (-2.66)***	0.005 (1.54)
DA _{t-1}									-0.135 (-3.83)***	-0.059 (-1.65)*	-0.135 (-3.64)***
PB _{t-1}									-0.000 (-0.36)	-0.000 (-0.36)	-0.000 (-0.48)
Constant	0.126 (6.76)***	0.111 (6.40)***	0.126 (6.05)***	0.111 (5.59)***	0.083 (1.97)**	0.051 (1.32)	0.083 (1.67)*	0.051 (1.13)	0.010 (0.13)	0.263 (3.13)***	0.010 (0.13)
Year fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Country fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Industry fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Firm Cluster	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes
Observations	5,485	5,484	5,485	5,484	4,269	4,267	4,269	4,267	4,269	4,267	4,269
Adjusted R-squared	0.001	0.216	0.001	0.216	0.002	0.215	0.002	0.215	0.005	0.216	0.005

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix A.C

Regression hypothesis 3, Tobin's Q

VARIABLES	TQ _{it}	TQ _{it}	TQ _{it}	TQ _{it}	TQ _{it}	TQ _{it}	TQ _{it}	TQ _{it}	TQ _{it}	TQ _{it}	TQ _{it}
CSR _{t-1}	-0.006 (-5.68)***	-0.008 (-7.62)***	-0.006 (-2.76)***	-0.008 (-3.80)***	-0.013 (-8.25)***	-0.013 (-8.38)***	-0.013 (-4.16)***	-0.013 (-4.16)***	0.003 (1.56)	0.001 (0.34)	0.003 (0.90)
AIND _{t-1}					-0.857 (-5.15)***	-0.446 (-2.84)***	-0.857 (-2.92)***	-0.446 (-1.67)*	-0.596 (-3.92)***	-0.399 (-2.70)***	-0.596 (-2.38)**
CSR*AIND _{t-1}					0.012 (4.93)***	0.006 (2.69)***	0.012 (2.85)***	0.006 (1.61)	0.008 (3.70)***	0.005 (2.43)**	0.008 (2.25)**
SIZE _{t-1}									-0.257 (-21.18)***	-0.231 (-16.70)***	-0.257 (-9.91)***
DA _{t-1}									-0.493 (-4.12)***	-0.218 (-1.70)*	-0.493 (-1.72)*
PB _{t-1}									0.035 (18.40)***	0.030 (16.35)***	0.035 (1.56)
Constant	1.715 (24.14)***	1.827 (26.90)***	1.715 (11.80)***	1.827 (13.06)***	2.201 (19.81)***	2.165 (20.31)***	2.201 (9.67)***	2.165 (9.81)***	7.085 (27.62)***	6.581 (22.88)***	7.085 (11.31)***
Year fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Country fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Industry fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Firm Cluster	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes
Observations	5,485	5,484	5,485	5,484	4,243	4,241	4,243	4,241	4,243	4,241	4,243
Adjusted R-squared	0.006	0.171	0.006	0.171	0.016	0.178	0.016	0.178	0.180	0.275	0.180

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix A.D

Regression hypothesis 3, return on assets

VARIABLES	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t	ROA _t
CSR _{t-1}	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	0.000	0.000	0.000
	(-3.15)***	(-2.48)**	(-1.89)*	(-1.49)	(-2.41)**	(-1.93)*	(-1.68)*	(-1.22)	(2.41)**	(2.80)***	(1.67)*
AIND _{t-1}					-0.009	-0.004	-0.009	-0.004	-0.002	-0.003	-0.002
					(-1.06)	(-0.48)	(-0.73)	(-0.33)	(-0.23)	(-0.31)	(-0.16)
CSR*AIND _{t-1}					0.000	0.000	0.000	0.000	0.000	-0.000	0.000
					(0.82)	(0.12)	(0.58)	(0.09)	(0.08)	(-0.08)	(0.06)
SIZE _{t-1}									-0.007	-0.007	-0.007
									(-10.15)***	(-9.23)***	(-5.73)***
DA _{t-1}									-0.057	-0.044	-0.057
									(-8.46)***	(-5.97)***	(-4.16)***
PB _{t-1}									0.001	0.001	0.001
									(10.29)***	(8.79)***	(1.57)
Constant	0.057	0.055	0.057	0.055	0.060	0.057	0.060	0.057	0.201	0.204	0.201
	(15.50)***	(14.94)***	(9.24)***	(8.84)***	(10.01)***	(9.72)***	(6.84)***	(6.01)***	(13.82)***	(12.43)***	(7.47)***
Year fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Country fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Industry fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Firm Cluster	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes
Observations	5,485	5,484	5,485	5,484	4,243	4,241	4,243	4,241	4,243	4,241	4,243
Adjusted R-squared	0.002	0.103	0.002	0.103	0.001	0.124	0.001	0.124	0.065	0.164	0.065

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix A.E

Regression hypothesis 3, stock return

VARIABLES	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t	RETURN _t
CSR _{t-1}	-0.001	-0.000	-0.001	-0.000	-0.001	-0.001	-0.001	-0.001	-0.001	-0.000	-0.001
	(-2.05)**	(-1.29)	(-1.92)*	(-1.17)	(-2.30)**	(-2.20)**	(-2.14)**	(-2.00)**	(-2.78)***	(-0.77)	(-2.70)***
AIND _{t-1}					-0.045	-0.064	-0.045	-0.064	-0.049	-0.064	-0.049
					(-0.99)	(-1.55)	(-0.91)	(-1.39)	(-1.09)	(-1.54)	(-1.01)
CSR*AIND _{t-1}					0.001	0.001	0.001	0.001	0.001	0.001	0.001
					(0.83)	(1.24)	(0.80)	(1.16)	(0.99)	(1.24)	(0.96)
SIZE _{t-1}									0.006	-0.009	0.006
									(1.56)	(-2.44)**	(1.67)*
DA _{t-1}									-0.138	-0.061	-0.138
									(-3.89)***	(-1.71)*	(-3.73)***
PB _{t-1}									-0.000	-0.000	-0.000
									(-0.31)	(-0.27)	(-0.41)
Constant	0.126	0.111	0.126	0.111	0.158	0.153	0.158	0.153	0.081	0.351	0.081
	(6.76)***	(6.40)***	(6.05)***	(5.59)***	(5.26)***	(5.47)***	(4.67)***	(4.77)***	(1.06)	(4.36)***	(1.06)
Year fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Country fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Industry fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Firm Cluster	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes
Observations	5,485	5,484	5,485	5,484	4,243	4,241	4,243	4,241	4,243	4,241	4,243
Adjusted R-squared	0.001	0.216	0.001	0.216	0.001	0.215	0.001	0.215	0.004	0.216	0.004

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1