

CSR Restatements: mischief or mistake?

Rebecca L. Bachmann
rebecca.bachmann@mq.edu.au
Macquarie University

Helen Spiropoulos
helen.spiropoulos@uts.edu.au
University of Technology Sydney

ABSTRACT

Using a sample of ASX 500 firms over the 2004–2020 period, we find that contracting on corporate social responsibility (CSR) increases the likelihood of CSR restatements and that these restatements are biased towards showing improvements in CSR performance for the current period. This is especially the case when firms contract on social CSR performance measures. We also find that CEOs' short-term incentive compensation is significantly greater when restatements result in improved comparative performance, but only for firms that contract on CSR. Overall, our results suggest that contracting on CSR is another explanation for the increasing prevalence of CSR restatements and that standard setters should address metrics and measures when formulating policies with respect to CSR reporting.

Keywords: CSR contracting, CSR reporting, CEO compensation, CSR restatements.

JEL Classification: M12, M14, M52.

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I. INTRODUCTION

Corporate social responsibility (CSR) disclosure is an emerging managerial practice that has gained significant attention in recent years. Firms face increasing pressure to conduct business in a way that minimizes negative social and environmental impacts, and many firms choose to report on how they are good corporate citizens. Alongside the rise of CSR reporting, firms have increasingly begun to use CSR performance measures in executive compensation contracts. For example, roughly one third of S&P 500 firms included CSR measures in compensation contracts by 2013 (Flammer, Hong and Minor 2019; Ikram, Li and Minor 2019). This study examines whether the use of CSR performance measures in CEO compensation contracts is associated with restatements of CSR data.

The motivation for this study is twofold. First, CSR reporting is largely unregulated across the globe and therefore falls within the realm of voluntary disclosure. Because of this, there is significant variability in how CSR information is disseminated, as well as the contents of CSR reports, and many criticize the information provided as being unreliable and inconsistent (Michelon, Pilonato and Ricceri 2015).¹ Despite the existence of sustainability reporting frameworks, 37 percent of CSR reports from Global Fortune 250 firms have been found to include restatements with a bias towards overstatement (Pinnuck, Ranasinghe, Soderstrom and Zhou 2021). Given the increasing use of CSR performance measures in executive compensation contracts (Bachmann, Loyeung, Spiropoulos and Mastolcsy 2020; Flammer et al. 2019; Ikram et al. 2019) and the literature showing compensation to be an incentive to manage earnings (Bergstresser and Philippon 2006; Laux and Laux 2009), the question arises as to whether managers use CSR restatements to achieve performance measures in their compensation contract? Alternatively, the inclusion of CSR performance measures in CEO

¹ For example, some firms disclose CSR information via webpages, others include it in the annual report, and some provide separate sustainability reports.

compensation contracts may generate an incentive to invest in more accurate CSR measurement systems. In other words, are CSR restatements due to bias or noise? We provide empirical evidence on this question.

The second motivation for this study arises from the emergent literature examining CSR reporting and the lack of information about CSR contracting practices in Australia. CSR reporting is an important issue given its increasing occurrence and pressure to conduct business in a way that minimizes any negative social and environmental impacts. In fact, many call for CSR related performance measures to be incorporated into executive compensation contracts in order to observe real improvement in CSR performance (e.g., Burchman and Sullivan 2017). This practice is more common in countries that are perceived to be Environmental, Social and Governance (ESG) sensitive (Cohen, Kadach, Ormazabal and Reichelstein; 2022), such as those with a large materials sector like Australia. Therefore, the Australian institutional setting provides the opportunity to examine CSR reporting and contracting patterns for firms facing increased monitoring in these areas. We provide recent empirical evidence on CSR contracting and restatements of Australian listed firms.

Using a sample of ASX 500 firms over the 2004-2020 period, we find that there is bias in the direction of restatements of CSR performance. Specifically, we find that the majority of restatements are unfavorable, meaning prior year's performance is restated to be worse than originally reported, and lead to improved comparative performance between the current and prior year.² Of the total line-items restated, almost three quarters were due to measurement change, whereas only 15 percent were a correction of a previous error. The magnitude of line-item restatements is considerably high (i.e., on average 28.3 percent of the original value), yet varies according to whether it resulted in improved comparative performance or worse

² Improved comparative performance is when the change between year $t-1$ and year t is in a positive direction and greater than if using the original number reported in year $t-1$.

comparative performance, and whether it corresponded to a performance measure being contracted on. Overall, we find that contracting on CSR increases the likelihood of restatements, particularly when social performance measures are included in CEOs' compensation contracts.³

A randomly selected anecdotal example of this is the OZ Minerals CEO who in 2012 had 30 percent of their short-term incentive (STI) weighted towards CSR related performance measures, including "...improvement in female gender diversity at all management and operational levels" (OZ Minerals, 2012a, p. 30). In the same year, OZ minerals indicated that the "2011 statistics [of gender representation] have been restated in line with new methodology" (OZ Minerals, 2012b, p. 21). Another randomly selected example is the Commonwealth Bank of Australia which in 2018 attributed 15 percent of the CEO's STI towards CSR related performance measures including "...safety and wellbeing" (Commonwealth Bank 2018, p. 106). In the same year, the Commonwealth Bank of Australia made a restatement to their lost time injury frequency rate (LTIFR) reported under the category of safety and wellbeing in its 2018 integrated sustainability report "due to claims received after year-end reporting date as well as expanded scope to include New Zealand employees" (Commonwealth Bank, 2018, p. 78). This restatement was unfavorable in nature and the reported LTIFR for 2017 increased from 1.1 to 1.6 (i.e., 45 percent increase) but allowed the firm to state that "our [...] LTIFR improved [between 2017 and 2018], with 1.1 incidents per million hours worked" (Commonwealth Bank, 2018, p. 38).⁴

We also find that CEOs' short-term incentive compensation is significantly greater when restatements result in improved comparative performance, but only for firms that contract on

³ This includes, but is not limited to, targets such as improving gender diversity or reducing occupational health and safety hazards. We find that there is a match between the measure being restated and the measure being contracted on in 33.58 percent of restatements in our sample.

⁴ LTIFR is considered to have improved because it decreased from 1.6 (restated) incidents to 1.1 incidents per million hours worked between 2017 and 2018.

CSR and especially when the restated line-item corresponds to the CSR measure contacted on. These results are robust to a number of alternative measures and sensitivity tests and provide evidence in support of the bias explanation for CSR restatements. That is, contracting on CSR provides CEOs with an incentive to make CSR restatements that improve the current year's CSR performance relative to the prior year, therefore achieving performance measures within their compensation contracts.

This study makes a number of important contributions. First, it is the first to provide evidence which suggests that the inclusion of CSR related performance measures within CEO compensation contracts provides incentives to manipulate CSR performance, at least in terms of restatements, which are associated with greater realized pay. Existing explanations for CSR restatements argue that restatements are the result of assurance providers attempting to establish legitimacy in a new market (Michelon et al. 2019) or that improvements in information systems over time result in restatements (Pinnuck et al. 2021). We provide evidence to support an alternative explanation for CSR restatements, CSR contracting, and find that contracting on CSR is associated with biased CSR restatements and restatements due to measurement changes rather than error, which is in contrast to restatements driven by CSR assurance (Michelon et al. 2019).

We build on the study by Pinnuck et al. (2021) and the earnings management literature in general, by showing that CEO compensation incentives play a part in the accuracy of reported CSR performance, after controlling for other determinants of restatements including assurance and firm CSR targets/benchmarks. Our results are consistent with criticisms of CSR data being unreliable (Michelon et al. 2015) and are of interest to compensation committees and regulators in determining whether CSR data should be audited and/or included in CEO compensation contracts. Furthermore, these findings are relevant to the International Sustainability Standards

Board (ISSB) which is seeking to draft sustainability reporting standards but has yet to consider issues surrounding metrics and measurement.

Second, our results contribute to the literature examining the use of non-financial performance measures within executive compensation contracts and the importance of considering the reliability, timing, cost of producing the measure and its effect on managerial actions (Dikolli and Vaysman 2006). We also contribute to the growing CSR literature by providing the most recent empirical evidence of CSR reporting and contracting patterns of publicly listed firms in Australia, and the most recent evidence on CSR restatements. Prior studies examining CSR restatements use a sample period that ends on or before 2015 (e.g., Michelon, Patten and Romi 2019; Pinnuck et al. 2021), therefore, our study is useful for extending existing knowledge of restatements beyond that point.

The remainder of this study is structured as follows: section 2 discusses prior literature and our hypotheses; section 3 presents the research method; sections 4 discusses the empirical results; section 5 discusses additional analyses, and; section 6 presents concluding remarks.

II. RELATED LITERATURE AND HYPOTHESES DEVELOPMENT

Much of the literature on CSR reporting centers around whether CSR reporting has increased as a result of greater initiatives to improve environmental and social performance, or whether firms are attempting to manage stakeholders' perceptions due to increased external pressure (e.g., Neu, Warsame and Pedwell 1998; Bansal 2005).⁵ In fact, many view CSR reporting as 'greenwashing', which describes the selective disclosure of positive environmental or social performance and the withholding of negative information concerning these dimensions (e.g., Adams 2004). Therefore, calls have been made to incorporate CSR related performance

⁵ These two arguments stem from legitimacy theory where firms engage in substantive or symbolic behaviors in response to social requirements (e.g., O'Donovan 2002) and stakeholder theory where firms seek to address stakeholders' claims beyond shareholders (Freeman 1984).

measures within executive compensation contracts in order to motivate executives to make real changes to improve environmental and social performance (e.g., Burchman and Sullivan 2017; Salazar and Mohamed 2018).

Many firms implicitly contract on CSR performance with executives in the form of reductions in pay following poor environmental or social performance. For example, Rio Tinto cut executive bonuses due to widespread reports of bullying and sexual abuse within the work environment (Szabo 2021). Similarly, BHP Billiton's CEO took a 25 percent pay cut following the unexplained death of an employee and a runaway train that caused significant damage (Jamasmie 2019), as well as a 50 percent pay cut a couple of years earlier following the Samarco dam disaster in Brazil (Reuters 2016). However, in terms of explicit contracting, around one third of firms incorporate CSR related performance measures within executive compensation contracts and this is more prevalent in firms within emission intensive industries (Flammer et al. 2019; Ikram et al. 2019; Tsang, Wang, Liu and Yu 2021).

Studies have found that integrating CSR criteria into executive compensation is usually associated with greater CSR performance (e.g., Hong, Li and Minor 2016; Flammer et al. 2019; Ikram et al. 2019) and innovation (e.g., Tsang et al. 2021), however some question the economic significance of such measures compared to executives' incentives to maximize share value (e.g., Walker 2022). Given the discretionary nature of many CSR related performance measures, the question also arises as to whether they are useful as performance measures within executive compensation contracts, since discretionary measures are easier to manipulate. This is particularly concerning in light of the incidence of restatements of CSR information. For instance, 39 percent of the Global Fortune 250 CSR reports include one or more line-item

restatements (Pinnuck et al. 2021). Accordingly, contracting on CSR related performance measures may provide incentives to manipulate CSR performance.⁶

The inclusion of CSR related performance measures in CEO compensation contracts may incentivize CEOs to manipulate CSR data in two ways. First, the inclusion of CSR related performance measures in year $t-1$ compensation contracts may incentivize CEOs to overstate CSR performance in year $t-1$ to achieve these targets. This action increases the likelihood of a restatement in year t to correct the overstatement from year $t-1$ (*i.e., the performance of the restated line-item in year $t-1$ is restated to be worse than originally reported*).⁷ Second, inclusion of CSR related performance measures in year t compensation contracts may incentivize CEOs to change the way CSR line-items are measured or classified to present more favorable outcomes for the current reporting period. This change would require a restatement of year $t-1$ figures to align with the new measurement or classification in year t . An alternative argument is that linking CEO compensation to CSR performance may lead to improvements in the accuracy of CSR measurement systems over time, resulting in a greater number of restatements in subsequent periods. Therefore, we develop the following hypothesis:

H1: The inclusion of CSR performance measures in CEO compensation contracts increases the likelihood of CSR restatements.

As discussed above, prior literature presents two plausible explanations for why contracting on CSR may result in a greater number of restatements – noise or bias. However, if restatements are a signal of improvements in measurement systems, there should be no directional bias in CSR restatements. That is, restatements may be due to past over- or understatements of

⁶ There is a well-established literature which shows that CEO compensation provides incentives to misreport earnings (e.g., Holthausen, Larcker and Sloan 1995; Healy 1985; Burns and Kedia 2006). Therefore, it may also provide incentives to misreport CSR performance.

⁷ Restatements that result in worse performance than originally reported are referred to as *unfavorable* restatements in this paper and are equivalent to what Pinnuck et al. (2021) refer to as ‘overstatements’.

performance and could lead to improved or worse comparative performance between years $t-1$ and t . In contrast, if CEOs intentionally manipulate CSR data when it is linked to their compensation, we expect that CSR restatements are biased and more likely to result in improved comparative performance between years $t-1$ and year t . This is because CSR performance measures within CEO compensation contracts are most often expressed as relative improvements in performance, therefore restatements which improve comparative performance from year $t-1$ and t will consequently help CEOs maximize their cash bonus. We argue, what gets measured gets managed and CEOs are unlikely to restate line-items unless the outcome of the restatement is favorable to them. Accordingly, our next hypothesis is as follows:

H2: The inclusion of CSR performance measures in CEO compensation contracts increases the likelihood of CSR restatements that result in improved comparative performance from year $t-1$ to year t .

Finally, if restatements are, on average, the result of CEOs attempting to increase comparative performance to achieve CSR performance measures in the compensation contract, then we expect CEOs' ex-post STI compensation to be greater in the presence of CSR restatements for firms that contract on CSR, but not firms that do not contract on CSR. Accordingly, our final hypothesis is developed as follows:

H3: There is a positive association between CSR restatements and realized short-term incentive compensation when CSR performance measures are included in CEO compensation contracts.

III. SAMPLE AND RESEARCH DESIGN

3.1 Sample

Our sample is based on ASX 500 firms over the 2004-2020 period. We construct our sample by examining remuneration disclosures in annual reports to identify firms that report on the performance measures used within the CEO's compensation contract. To determine whether a

firm reports on CSR, we check annual reports, firm websites and separate disclosures such as sustainability and CSR reports.⁸ We obtain firm financial data from Morningstar DatAnalysis, governance data from Connect4 and SIRCA, and obtain CSR performance data from Thomson Reuters Asset4. This process yields a sample of 1,567 firm year observations.

To collect restatement data, we search through all sustainability reports and disclosures inside annual reports for words such as ‘restate’ or ‘adjust’ and read through the corresponding footnotes and disclosures to identify the restated line-items and the reasons for the restatement. We are only concerned with restatements relating to year $t-1$ because few firms provide more than one year of comparative data and contracting on CSR, more often than not, is expressed in terms of relative performance (e.g., increase in use of renewable resource inputs, decrease in workplace injuries). While reading through restatements, we determine the effect of the restatement on year $t-1$ performance. If the restatement improves (reduces) the performance originally reported, then it is a favorable (unfavorable) restatement. We then determine the effect of the restatement on the comparative performance from year $t-1$ to year t . When doing so, we recognize that some measures improve when they decrease (such as injuries and carbon emissions), and some improve when they increase (such as recycling rates) – and vice versa. Therefore, restatements that cause the change between year $t-1$ and year t to be in a positive (negative) direction and greater than if using the original reported number result in improved (worse) comparative performance.⁹ Last, we look at the magnitude of restatement, reason for

⁸ Some firms (such as Wesfarmers (ASX:WES)) disclose CSR performance through interactive web media rather than a separate readable report. We also double check the verified GRI report list at <https://www.globalreporting.org>, as well as the Thomson Reuters ASSET4 database.

⁹ For measurement changes, we cannot observe what the reported number would be in year t under the old measurement system. Therefore, comparative performance is calculated by comparing the change using the restated number for year $t-1$ in year t and the original reported number in year $t-1$. [As a complimentary analysis, we examine restatements due to error and also find bias towards improved comparative performance \(71 percent\) compared to worse \(22 percent\).](#)

restatement (where given) and whether it is a restatement of a social or environmental performance metric.

A common social restatement that occurs in our sample is the restatement of health and safety figures, consistent with Pinnuck et al. (2021). For example, in 2014, OZ Minerals stated that the "...comparison LTIFR [lost time injury frequency rate] for 2013 has been restated to 1.20 (from 0.96) due to the reclassification of a restricted work injury to a lost time injury in early 2014" (OZ Minerals 2014, p. 25). Another example is Wesfarmers who stated that a restatement to prior year TRIFR occurred "to reflect a change in [...] definition of [total recordable injuries] TRIs to reflect industry practice" (Wesfarmers, 2014, p. 4) – similar restatements to *t-I* performance were made by Wesfarmers in every sustainability report between 2011 to 2014. Westpac Banking Corporation also made a number of restatements relating to health and safety metrics "...as previously reported numbers did not include NZ [New Zealand] contractors" (Westpac, 2014, p. 67).

Common examples of restatements of environmental performance are metrics relating to carbon emission and water usage. For example, Coronado Global Resources Inc stated that "total Scope 1 emissions reported in 2018 [were] restated from 81,420 tCO₂-e to 1,757,642 tCO₂-e and in 2019 from 2,009,733 tCO₂-e to 2,012,025 tCO₂-e" (Coronado Global Resources Inc, 2020, p. 17). Infigen Energy similarly made a restatement of reported Scope 1 greenhouse gases "...as a result of changes in measurement methods" (Infigen Energy, 2016, p. 25).

Panel A of Table 1 breaks down the sample by firms which report on CSR, firms that have a separate CSR report, and firms that have CSR restatements. The reported figures illustrate that there has been an increase in the proportion of firms that report on CSR to around half of all the firms in sample (47.94 percent) by the year 2020. Of those firms, 72 percent disclose CSR

performance in a separate report and the remainder integrate CSR reporting into the annual report. The number of restatements also increases as the incidence of CSR reporting increases.

Panel B of Table 1 provides an overview of the sample distribution by year of firms that contract on CSR. First, it is evident that the frequency of firms that contract on CSR has increased over time and on average around 44 percent of firms that report on CSR also contract on CSR. This result is similar to the proportion of S&P 500 firms that contract on CSR in the United States (U.S.) (Ikram et al. 2019).¹⁰ Similarly, we find that the relative weighting placed on CSR performance measures has also increased over time. For example, prior to 2010, the average weight placed on CSR measures among firms in our sample was approximately 10 percent, whereas after 2010 it increased to approximately 17 percent (not tabulated). This is consistent with trends observed in the United Kingdom where 37 percent of FTSE 100 firms in 2021 contract on CSR with an average weighting of 15 percent (Gosling et al. 2021)

Second, the majority of CSR contracting is in the form of social performance measures rather than environmental performance measures. For example, by the year 2020, around 95 percent of firms that contract on CSR do so in the form of social measures in CEO compensation contracts, while 45 percent of firms that contract on CSR include environmental measures.¹¹

Panel C shows the breakdown of firms that report on CSR and those that contract on CSR. Of the 674 firms that report on CSR, 368 contract on CSR related performance measures with the CEO. Interestingly, 320 firms contract on CSR but do not report on CSR performance, and are consequently excluded from our main tests.¹² Panel D reports the sample distribution by

¹⁰ This figure is also consistent with Thomson Reuters Asset4 database which over the period of 2004 to 2020 reports that around 40 percent of 3,744 firm-year observations of ASX listed firms report on CSR.

¹¹ Firms can include both social and environmental performance measures in the CEO's compensation contract, hence this explains why these two figures do not add up to 100 percent.

¹² This is because firms must first report on CSR to be able to restate CSR measures. We conduct a number of additional tests on the initial sample of 1,567 firm-year observations, treating firms that do not report on CSR as having no restatements. Results remain consistent with those presented in this study (not tabulated).

industry. Materials (27.19 percent) and Industrials (13.85 percent) represent the two largest sectors in our sample, which is characteristic of the Australian economy.

3.2 Research design

To examine H1, whether contracting on CSR is associated with CSR restatements, we estimate the following logit regression model on the sample of firms that report on CSR performance:

$$\begin{aligned} \text{RESTATEMENT}_{i,t} = & \alpha + \beta_1 \text{CONTRACT_CSR}_{i,t} + \beta_2 \text{AUDITED}_{i,t} + \beta_3 \text{GRI}_{i,t} + \beta_4 \text{SENSITIVE}_{i,t} \\ & + \beta_5 \text{GOVERNANCE}_{i,t} + \beta_6 \text{YEARS_CSR}_{i,t} + \beta_7 \text{SOCIAL_PERF}_{i,t} + \beta_8 \text{ENV_PERF}_{i,t} + \\ & \beta_9 \text{TARGETS}_{i,t} + \beta_{10} \ln \text{ASSETS}_{i,t} + \beta_{11} \ln \text{PPE}_{i,t} + \text{YEAR FE} + \text{INDUSTRY FE} + \varepsilon_i \end{aligned}$$

(1)

The dependent variable *RESTATEMENT* is an indicator variable equal to 1 if firm *i* in year *t* discloses that a line-item relating to year *t-1* has been restated, and 0 otherwise. Because reports can include many restatements, we apply two alternative dependent variables to capture restatements related to social (*%RESTATE_SOCIAL*) and environmental (*%RESTATE_ENVIRO*) performance at the report level. *%RESTATE_SOCIAL* is the proportion of restated line-items that relate to social measures out of all restated CSR line-items (e.g., injuries, diversity). *%RESTATE_ENVIRO* is the proportion of restatements that relate to environmental indicators out of all restated CSR line-items (e.g., water use, carbon emission). The main independent variable of interest is *CONTRACT_CSR* which is an indicator variable equal to 1 if CSR related performance measures were included in the CEO's compensation contract for firm *i* in year *t*, and 0 otherwise. We also break down *CONTRACT_CSR* into social (*CONTRACT_SOCIAL*) and environmental (*CONTRACT_ENVIRO*) performance measures to test in detail whether these lead to an increased likelihood of social or environmental restatements. In other words, we expect to see social restatements but not environmental

restatements if a firm contracts on social performance measures but not environmental performance measures and vice versa. We also separately test lags of these variables to examine if contracting on CSR in year $t-1$ leads to restatements in year t (i.e., correction of prior period CSR performance).¹³

We include several control variables in our regression model found to be associated with CSR restatements in prior literature (e.g., Michelon et al. 2019 and Pinnuck et al. 2021). First, we include controls for monitoring of CSR performance. These include whether the CSR information is audited (*AUDITED*) since auditors face litigation incentives to guard against intentional misrepresentation and may also wish to demonstrate expertise in this area by identifying misstatements (Michelon et al., 2019); if the firm follows GRI reporting guidelines (*GRI*) since it restricts managerial reporting choice; if the firm operates within the industrial and materials sectors (*SENSITIVE*), because these industries are associated with greater environmental or social risks and therefore are under greater scrutiny regarding to their CSR performance and may have more advanced CSR measurement systems in place; and the relative corporate governance performance of firm i in year t , compared to the universe of firms covered by the Thomson Reuters' Asset4 database (*GOVERNANCE*). Second, we acknowledge that CSR restatements could be due to improvements in accounting information systems in this area, so we control for the number of years since the firm began reporting on CSR (*YEARS_CSR*) with the expectation that accounting measurement systems evolve and refine over time. We also control for social and environmental performance (*SOCIAL_PERF* and *ENV_PERF*, respectively) as reported in Thomson Reuters' Asset4 database and whether the firm has CSR targets (*TARGETS*) in general (not compensation targets). We control for CSR performance and targets since these create incentives to bias reported performance, as documented in the

¹³ We include lags separately in Model (1) due to the highly correlated nature of these variables between years t and $t-1$.

accounting literature (e.g., Burgstahler and Dichev 1997; Bartov, Givoly and Hayn 2002). Finally, we include the natural log of total assets to control for firm size (*lnASSETS*), and property, plant and equipment (*lnPPE*) to control for complexity of operations and capital intensity. Appendix A lists all variables and definitions, as well as the data source.

To examine H2, whether CSR restatements are more likely to result in improved comparative performance from year *t-1* to year *t* in firms contracting on CSR, we estimate the following Ordinary Least Squares (OLS) regression:

$$\begin{aligned} \%RESTATE_IMPROVED_{i,t} = & \alpha + \beta_1 CONTRACT_CSR_{i,t} + \beta_2 AUDITED_{i,t} + \beta_3 GRI_{i,t} + \\ & \beta_4 SENSITIVE_{i,t} + \beta_5 GOVERNANCE_{i,t} + \beta_6 YEARS_CSR_{i,t} + \beta_7 SOCIAL_PERF_{i,t} + \\ & \beta_8 ENV_PERF_{i,t} + \beta_9 TARGETS_{i,t} + \beta_{10} lnASSETS_{i,t} + \beta_{11} lnPPE_{i,t} + YEAR\ FE + INDUSTRY\ FE \\ & + \varepsilon_i \end{aligned}$$

(2)

%RESTATE_IMPROVED is equal to the proportion of restatements relating to year *t-1* that resulted in an improvement in comparative performance between year *t-1* and year *t* out of all restated CSR line-items. We examine the effect of restatements on comparative performance because CSR related performance measures in compensation contracts are often expressed in relative terms (i.e., increase or decrease) rather than specific hard targets. For example, in its 2017 annual report, Metcash Limited highlights that it strives "...to have a strong focus on workplace safety and *reducing* injury" and in the CEO's report state that "I am pleased to report that the Lost Time Injury Frequency Rate for the year has declined" (Metcash, 2017, p. 8). However, as illustrated in Figure 1, prior to the restatement, the relative change of LTIFR between 2016 and 2017 would have been an increase of 17.5 percent compared to year *t-1*. As mentioned previously, the Commonwealth Bank of Australia made a similar restatement to LTIFR in 2018 that improved comparative performance by 45.5 percent (Commonwealth Bank

2018). Both are examples of a restatement where a significant improvement in comparative performance between $t-1$ and t can be observed.¹⁴

We also examine *%RESTATE_WORSE* as an alternative measure to capture restatements that resulted in worse comparative performance.¹⁵ However, insufficient disclosure means that the effect of some restatements cannot be identified, therefore *%RESTATE_IMPROVED* and *%RESTATE_WORSE* are not the direct inverse of each other. All other control variables are as previously defined and are listed in Appendix A.

Finally, we estimate the following OLS regression model to examine H3, whether restatements are associated with greater realized short-term incentive compensation for CEOs in firms that contract on CSR:¹⁶

$$\begin{aligned} \ln STI_{i,t} = & \alpha + \beta_1 RESTATEMENT_{i,t} + \beta_2 SOCIAL_PERF_{i,t} + \beta_3 ENV_PERF_{i,t} + \beta_4 TARGETS_{i,t} \\ & \beta_5 \ln PPE_{i,t} + \beta_6 ROA_{i,t} + \beta_7 RETURN_{i,t} + \beta_8 \ln ASSETS_{i,t} + \beta_9 LEVERAGE_{i,t} + \beta_{10} MB_{i,t} + \\ & \beta_{11} \ln CASH_{i,t} + \beta_{12} sd5ROA_{i,t} + \beta_{13} GOVERNANCE_{i,t} + \beta_{14} FEMALE_{i,t} + \beta_{15} CEO_AGE_{i,t} + \\ & \beta_{16} CEO_SHARES_{i,t} + \beta_{17} CEO_TENURE_{i,t} + \beta_{18} CEO_SALARY_{i,t} + YEAR\ FE + FIRM\ FE + \varepsilon_i \end{aligned}$$

(3)

Where $\ln STI$ is the natural logarithm of the CEO's short-term incentive compensation for firm i in year t , which consists of a cash bonus. In the Australian institutional setting, CSR related performance measures are incorporated into STI but not long-term incentive compensation

¹⁴ Other firms include similar performance measures, such as Elders Ltd which in 2018 states that they are expected to 'drive significant progress in achieving an injury free workplace' (Elder, 2018 p. 61), or PHB which in 2020 includes performance measures in relation to TRIF stating that the CEO must achieve "...improved performance compared with FY2019 results" (BHP, 2020, p. 151).

¹⁵ For example, in Figure 1, had the LTIFR of year $t-1$ been restated lower, the comparative performance would have been worse as it would see an increase in LTIFR from year $t-1$ to year t .

¹⁶ Because the minimum bonus awarded is zero, we also estimate Model (3) using Tobit regressions. Doing so does not change the sign or significance of our results (not tabulated).

plans, which is not unlike evidence provided from the U.S. (Walker 2022).¹⁷ If CSR restatements are used opportunistically by CEOs to achieve performance measures in their compensation contracts, then we expect to observe a positive and significant coefficient on β_1 for observations that contract on CSR, but not for those that do not contract on CSR. Alternatively, if restatements are due to prior errors or improvements in measurement systems, then there should be no association between restatements and CEO compensation.

The main independent variable of interest is *RESTATEMENT*, which we also break up into different components, being: whether at least one of the restated line-item matches the CSR related performance measure within the compensation contract (*MATCH*); whether restatements resulted in improved (*%RESTATE_IMPROVED*) or worse (*%RESTATE_WORSE*) comparative performance, and; the percentage of restatements that were social (*%RESTATE_SOCIAL*) or environmental (*%RESTATE_ENVIRO*).¹⁸

We follow prior literature and include controls for firm performance and economic characteristics which may affect compensation levels (e.g., Core, Holthausen, Larcker 1999; Chalmers, Koh and Stapledon 2006). These include return on assets (*ROA*), annual stock return adjusted for dividends, stock splits and repurchases (*RETURN*), firm size (*lnASSETS*), risk (*LEVERAGE* and *sd5ROA*), growth options (*MB*) and level of cash holdings (*lnCASH*) since cash bonuses are paid directly from cash. We also include CEO characteristics that may affect the level of cash bonus received. These include whether the CEO is female (*FEMALE*) since there is an ongoing debate regarding whether female CEOs are paid less than male CEOs, CEO age (*CEO AGE*) since older CEOs may suffer short-termism as they approach retirement, CEO shareholdings (*CEO SHARES*) since equity holdings encourage a long-term performance

¹⁷ And also consistent with other Australian evidence provided by Bachmann et al. (2020).

¹⁸ We do not include *MATCH* in Models (1) and (2) because *MATCH* can only exist if firms contract on CSR. If firms do not contract on CSR then the occurrence of restated line-items matching CSR related performance measures in CEO compensation contracts cannot happen. That is, *MATCH* is conditional upon CSR contracting.

increasing focus, CEO tenure (*CEO TENURE*) and CEO salary (*CEO SALARY*) to proxy for power and ability. Finally, we control for social (*SOCIAL_PERF*) and environmental (*ENV_PERF*) CSR performance and whether the firm has general CSR targets (*TARGETS*). All variables are defined in Appendix A.

IV. EMPIRICAL RESULTS

4.1 Descriptive statistics

Table 2 reports the summary statistics for the variables used in our analyses on the sample of firms that report on CSR. In this sample, 13.5 percent (91 observations) of firm years include a restatement of at least one CSR line-item. However, as some firms restate more than one line-item, there are a total of 274 line-item restatements relating to year $t-1$.¹⁹ As illustrated in Appendix B, these restatements are more likely to be due to measurement change (69.3 percent) than error (15.7 percent) or new data becoming available after the reporting date (10.2 percent). Restatements due to error or new data becoming available are generally environmental in nature, as illustrated in Figure 2, which could reflect the complexity of measuring such items.

Furthermore, the information provided in Appendix B shows that restatements are more likely to t (56.9 percent) rather than worse comparative performance (35.8 percent).²⁰ This is an important distinction as CEOs' performance measures are generally stated relative to year $t-1$. Hence, the existence of a directional bias in line-item revisions (i.e., a greater occurrence of restatements resulting in improved comparative performance) provides some initial evidence to suggest that these restatements potentially represent intentional bias, consistent with H2. It

¹⁹ Of these, 53 firm year observations have a restatement of one line-item only.

²⁰ In some instances, it is impossible to determine the direction of restatement or if it was to correct a past error due to insufficient disclosure. Accordingly, the percentage of restatements that are treated as *ERROR* and *MEASUREMENT*, *IMPROVED* and *WORSE*, *FAVORABLE* and *UNFAVORABLE* do not equal to 100.

is also worth noting that, at the restatement level, there is an overlap between the CSR measure contracted on and the line-item which was restated in 33.6 percent of cases.

As illustrated in Table 2, out of the sample of firms that report on CSR, 54.6 percent of firm year observations include CSR related performance measures within CEO compensation contracts (*CONTRACT_CSR*). Social performance measures (*CONTRACT_SOCIAL* 53.4 percent) appear more often than environmental performance measures (*CONTRACT_ENVIRO* 20.3 percent) in compensation contracts, which could reflect the fact that performance measures related to issues such as employee safety and diversity are easier to measure than carbon emissions.²¹ On average, firms attributed 4.3 percent of the CEO's STI towards CSR related performance measures (*%CONTRACT_CSR*). However, this figure increases to 16 percent of the CEO's total STI after excluding firms that do not incorporate CSR related performance measures. Accordingly, meeting the required CSR target in their compensation contract can make a difference of, on average, AUD199,546 when it comes to CEOs' realized annual cash bonus.²²

Approximately 40 percent of the sample operate within the materials or industrial sectors which are considered to be CSR sensitive industries (*SENSITIVE*). Moreover, around 22.7 percent have their CSR performance audited which is consistent with that reported by Michelin et al. (2019). Most sustainability assurance are provided by one of the Big 4 audit firms (13.9 percent).²³ Only 6.5 percent of firm-years follow GRI standards when reporting on CSR and, on average, have reported on CSR performance for 3.8 years. Looking at CEO characteristics,

²¹ See for example, Bader and Bleischwitz (2009).

²² We find that firms in our sample which contract on CSR on average provide an ex-ante STI opportunity equivalent to 1.1 times the CEO's fixed salary, consistent with Bachmann et al. (2020). Accordingly, if CSR related performance measures account for 15.5 percent of the CEO's STI, achieving these targets can make a difference of AUD\$199,546 (based on the average fixed salary in our sample of AUD \$1,166,596).

²³ Big 4 auditors are Deloitte, PricewaterhouseCoopers (PWC), KPMG and Ernst & Young (EY).

roughly 5 percent are female and, on average, are 54 years of age, own 2.6 percent of the firm's shares, have held their office for around 5 years, and receive AUD1.1 million salary.

4.2 Regression results

To determine whether the use of CSR performance measures in CEO compensation contracts is associated with a higher likelihood of CSR restatements, we estimate Model (1) using the sample of firms that report on CSR. The results are displayed in Table 3 where Panel A presents results for CSR contracting in year t and Panel B for CSR contracting in year $t-1$.

In columns (1) to (4), the pseudo R-squared ranges from 30.9 percent to 31.4 percent. Looking at column (1), *CSR* is positive and significant ($\beta=0.741$, $p<0.01$), indicating that contracting on CSR increases the likelihood of a restatement by 210 percent. When examining whether the restatements are driven by social or environmental performance measures (columns 2 to 4), we find that only *CONTRACT_SOCIAL* is positive and significant ($\beta=0.731$, $p<0.01$ and $\beta=0.574$, $p<0.05$). We also conduct a test of differences on *CONTRACT_SOCIAL* and *CONTRACT_ENVIRO* in column 4 (not tabulated), which confirms that the coefficients are statistically different ($\text{Chi}^2=10.63$, $p<0.01$). These results provide support for H1 and suggest that restatements are driven by contracting on social performance measures with the CEO.²⁴

Of the control variables, *AUDITED* and *GRI* are both positive and significant across columns (1) to (4), consistent with Pinnuck et al. (2021) and Michelon et al. (2019). We also find that capital intensity (*lnPPE*) is negatively associated with restatements while governance is positively associated with restatements.

²⁴ It could be that contracting on CSR causes an increase in CSR restatements generally (i.e., a spillover effect), therefore we conduct a t-test to determine whether firms that contract on CSR are associated with a greater number of CSR restatements in general – we find that there is no difference. We also replace the dependent variable in Model (1) with the number of restatements of year $t-1$ information made in year t and find no significant association.

In columns (5) to (8), we examine restatements related to social measures (*%RESTATE_SOCIAL*) and in columns (9) to (12) we examine environmental restatements (*%RESTATE_ENVIRO*). We find that the inclusion of social CSR performance measures in compensation contracts is positively associated only with restatements of social CSR performance, as illustrated in column (6) and (8) ($\beta=0.048$, $p<0.05$ and $\beta=0.048$, $p<0.05$, $\text{Chi}^2=5.42$, $p<0.05$), however environmental performance measures are insignificant across all columns. These results indicate that when firms contract on social CSR related performance measures, it is a social metric that is being restated in the firm's sustainability report. However, this finding alone is not enough to determine whether restatements are driven by bias or a reduction in noise due to a focus on those measures. Of the control variables, we find that governance is associated with more environmental restatements but not social restatements, and *AUDITED* is positive and significant across all columns.

Looking at Panel B, we do not find any significant association between CSR contracting in $t-1$ and CSR restatements in year t . There are two possible explanations for this result. First, there are a large number of firms contracting on CSR for the first time in our sample which reduces the number of observations contracting on CSR in year $t-1$. Second, in many instances there are a number of restatements within a single report. Therefore, it is possible that restatements to correct prior period errors are outnumbered by restatements relating to the current year's measures. This is supported by the line-item descriptives provided in Appendix B showing that only 15.7 percent of restatements are due to error.

To examine H2, whether CSR restatements are more likely to increase the comparative performance between year $t-1$ and year t , we estimate Model (2) on the subsample of firms that report on CSR. In this regard, it is worth noting that, as illustrated in Appendix B, 56.9 percent of restatements resulted in improved comparative performance, whereas only 35.8 percent

resulted in worse comparative performance. The results for Model (2) are displayed in Table 4.

Columns (1) to (4) examine restatements that result in improved comparative performance (*%RESTATE_IMPROVED*), and to confirm our results we examine those that result in worse comparative performance (*%RESTATE_WORSE*) in columns (5) to (8). Looking at columns (1) through (4), the adjusted R-squared ranges from 14.7 percent to 15.2 percent. We find that contracting on social performance measures is positively associated with restatements that improve the comparative performance between year *t-1* and year *t* ($\beta=0.048$, $p<0.01$ and $\beta=0.039$, $p<0.05$, respectively). These results are consistent with H2 and suggest that CSR contracting encourages bias in CSR restatements.²⁵ To confirm our results, we estimate Model (2) after replacing the dependent variable with its corresponding opposite (*%RESTATE_WORSE*). If H2 holds, we should not observe a positive significant association between CSR contracting and restatements that make the comparative performance between year *t-1* and year *t* worse.²⁶ Looking across columns (5) to (8), we find no significant association between *%RESTATE_WORSE* and *CONTRACT_CSR* or *CONTRACT_SOCIAL* or *CONTRACT_ENVIRO*, which provides further assurance of the results in columns (1) through (4) and supports the bias explanation of CSR restatements.

Of the control variables, *AUDITED* is positive and significant across all columns, which suggests that CSR assurance is associated with an increase in both types of restatements (Pinnuck et al. 2021; Michelon et al. 2019). However, *GRI* is negative and significant across columns (1) through (4). While *GRI* is positively associated with greater restatements in Table 3, it appears that those restatements are less likely to increase comparative performance, which

²⁵ Although we do not find a significant association between contracting on CSR in the prior year and current year restatements in Table 3 Panel B, we also estimate Model (2) using lags of CSR contracting but again found no significant results (not tabulated).

²⁶ However, it may be possible to observe a negative association if CEOs are able to intervene and avoid restatements that make comparative performance worse.

is consistent with Pinnuck et al. (2021) in terms of unfavorable restatements. Similarly, *GOVERNANCE* is associated with greater restatements that improve comparative performance in t across all columns (1) through (4), and having environmental targets in general (*TARGETS*) is associated with less restatements that result in worse comparative performance (albeit marginally at the 10 percent level).²⁷

To examine H3, whether CSR restatements in firms that contract on CSR are associated with greater short-term incentive compensation, we estimate Model (3) on the subsample of firms that report on CSR. We also split the sample between firms that do and do not contract on CSR.

As illustrated in Table 5, the adjusted R-squared ranges from 12.6 percent to 19.8 percent. Results presented in column (1) show that restatements in themselves do not impact CEO pay. However, we observe a positive and significant association when there is an overlap between the type of CSR measure being contracted on and the line-item being restated, as represented by *MATCH* in column (2) ($\beta=1.458$, $p<0.01$). Consistent with our previous findings, we also observe that among firms that contract on CSR (columns 3 and 5), there is a positive association between *%RESTATE_IMPROVED* and *%RESTATE_SOCIAL* and the CEO's ex-post STI payout ($\beta=0.930$, $p<0.10$; $\beta=1.837$, $p<0.01$, respectively).²⁸ Again, we find no significant results between these variables and the ex-post STI in the sub-sample of firms that do not contract on CSR. Furthermore, we do not find a significant result on *%RESTATE_WORSE* and *%RESTATE_ENVIRO*. Overall, these results suggest that CSR contracting is one explanation for CSR restatements which lead to an increase in CEO compensation in the form of cash bonuses.²⁹

²⁷ Governance has also been found to be positively associated with restatements in prior studies (e.g., Pinnuck et al. 2021) which indicates that well governed firms may have less reliable CSR metrics.

²⁸ Consistent with Pinnuck et al. (2019), we apply *%RESTATE_UNFAVORABLE* as an alternative independent dependent variable and find consistent results between *%RESTATE_UNFAVORABLE* and the CEO's ex-post STI payout ($\beta=0.967$, $p<0.05$) but no significant result for *%RESTATE_FAVORABLE* (not tabulated).

²⁹ We also check whether any firms took advantage of a clawback provision following the restatement of a CSR measure being contracted on but find no evidence of this taking place in our sample.

V. ADDITIONAL ANALYSES AND SENSITIVITY TESTS

To confirm the robustness of our results, we perform a number of sensitivity tests. First, to address potential concerns of endogeneity, we re-estimate Models (1), (2) and (3) on an entropy balanced subsample of firms. Within the subsample of firms that report on CSR, we match firms that contract on CSR to firms that do not contract on CSR. Panel A of Table 6 demonstrates that the matching procedure has been successful as all control variables are consistent between the two samples. Overall, results presented in Panels B and C of Table 6 remain consistent with those reported in Tables 3, 4 and 5. That is, we find CSR contracting is positively associated with CSR restatements, and that restatements of CSR performance are associated with a greater realized cash bonus, particularly if the CSR restatement relates to social CSR performance and when it matches the CSR measure being contracted on.

Second, we replace *CONTRACT_CSR* with *%CONTRACT_CSR*, a continuous variable that captures the relative weighting placed on CSR related performance measures in the CEO's compensation contract, tabulated in Appendix C.³⁰ Consistent with our main results, we find a positive and significant association between *%CONTRACT_CSR* and *RESTATEMENT* ($\beta=4.521$, $p<0.10$), particularly those that result in improved comparative performance ($\beta=0.545$, $p<0.05$). These results support the bias explanation for CSR restatements and suggest that restatements are more likely to occur when there is a greater monetary incentive for the CEO.³¹

Third, we review the footnotes of each restatement to determine whether the restatement was due to error or measurement change. Appendix B shows that only 15.7 percent of line-item

³⁰ We also apply *%CONTRACT_SOCIAL* as an alternative independent variable (not tabulated). However, do so on a smaller sub-sample because some firms disclose the relative weight placed on CSR related metrics in total, but do not disclose the relative weight attributed to each individual performance metric within the CSR category. Results remain consistent with those presented in Table 6.

³¹ As illustrated in Appendix C, the coefficient on *%CONTRACT_CSR* is insignificant in column (3) for *%RESTATE_WORSE*. Another possible explanation for this result could be lack of power since none of the variables appear significant in column 3.

restatements are due to error. We then aggregate this measure at the report level by calculating the percentage of restatements that resulted from error (*%RESTATE_ERROR*), and regress this on our CSR contracting variables as an alternative dependent variable in Model (1). As illustrated in Appendix D, we find no significant association between CSR contracting and restatements due to errors. We also calculate the percentage of restatements that resulted from a change in measure (*%RESTATE_MEASURE*), and regress this on our CSR contracting variables. We find a positive association between CSR contracting (*CONTRACT_CSR*) and *%RESTATE_MEASURE* ($\beta=0.039$, $p<0.05$), which is driven by contracting on social performance measures ($\beta=0.042$, $p<0.05$ and $\beta=0.039$, $p<0.10$) and not environmental performance measures. This finding is consistent with our main results and provides further evidence to support the bias explanation for CSR restatements.

Fourth, because prior studies have focused on the direction of the restatement rather than the impact on comparative performance, we follow Pinnuck et al. (2021) to examine bias in the direction of restatements. To do so, we take Model (2) and replace the dependent variable, *%RESTATE_IMPROVED*, with *%RESTATE_UNFAVORABLE* which is equal to the proportion of CSR line-item restatements for firm *i* in year *t*, that resulted in worse performance for year *t-1* than originally reported. Here, it is worth noting that in over 92 percent of cases, unfavorable restatements result in improved comparative performance (not tabulated).³² Consistent with our main findings, additional tests show that contracting on CSR increases the likelihood of an unfavorable restatement which is driven by contracting on social performance measures (not tabulated). We also include *%RESTATE_UNFAVORABLE* as an alternative independent

³² For the remaining 8 percent we were not able to observe comparative performance, however it is likely to always be the case that unfavorable restatements result in improved comparative performance. We also examine *%RESTATE_FAVORABLE* as an alternative measure but find no significant results. Like restatements that result in improved and worse comparative performance, unfavorable and favorable restatements are not the direct inverse of each other. This is due to the absence of comparable figures in some cases which are required to determine the direction of restatements.

variable in Model (3) and find that unfavorable restatements are positively associated with CEOs' STI payout (not tabulated), consistent with results in Table 5 and Table 6 Panel C. Overall, these results are consistent with the presence of bias in terms of the direction of restatements when firms contract on CSR related performance measures.

Fifth, we calculate the average absolute magnitude of restatements at the report level and regress this on *MATCH* (which captures whether at least one restatement matches the CSR measure contracted on). We use the absolute magnitude of restatements since increases and decreases can be either favorable or unfavorable restatements depending on the underlying measures. At the line-item level, the average magnitude for restatements that match the CSR measure contracted on is 35.5 percent, which is higher than the average absolute magnitude of all restatements, 28.3 percent. We find a significant positive coefficient on *MATCH* at the 1 percent level (not tabulated), suggesting that restatements are larger when the line-item corresponds to the performance measures that are contracted on. Overall, these results are supportive of the bias explanation for restatements.

Sixth, we replace our *AUDITED* variable with an indicator variable of whether CSR performance was audited by a Big 4 auditor. The audit literature attributes a reputational and skill effect to Big 4 auditors which is said to result in greater audit quality (e.g., DeAngelo 1981; Eshleman and Guo 2014; Hrazdil, Simunic and Suwanyangyuan 2021). Replacing our *AUDITED* variable with the Big 4 indicator variable does not change results and the Big 4 variable continues to be positive and significant (not tabulated).

Seventh, we estimate Model (3) using Tobit regressions since CEOs' short-term incentives (i.e., cash bonus) are censored at zero at the lower bounds. Using Tobit regressions instead of OLS does not change the sign or significance of our results (not tabulated). We also estimate Models (1) and (2) with the inclusion of firm fixed effects, results of which remain consistent

with those presented in Table 3 and 4 (not tabulated). Finally, we estimate Models (1), (2) and (3) on the full sample, treating all firms that do not report on CSR as having no restatement, results of which are consistent with our main findings (not tabulated).

VI. CONCLUSION

This study examines whether the use of CSR related performance measures within CEO compensation contracts is associated with a greater likelihood of CSR restatements and provides empirical evidence on whether restatements can be explained by bias or noise. Our results show that CSR contracting is associated with a greater number of CSR restatements, particularly when social performance measures are contained within CEO compensation contracts. Second, CSR contracting increases the likelihood of restatements that improve the current year's CSR performance relative to the prior year. Third, CEOs' short-term incentive compensation is higher in the presence of restatements that improve current year comparative performance, are related to social CSR performance measures, and those that correspond with the performance measures contracted on. Overall, our results suggest that compensation provides an incentive to manipulate CSR performance through restatements.

The results of this study highlight the importance of considering the reliability and cost of contracting on forward-looking performance measures such as CSR and are of importance to practitioners, compensation committees and regulators who seek to integrate CSR related performance measures into executive compensation contracts. We suggest that the ISSB may wish to carefully consider specifying metrics and measures when formulating sustainability standards, otherwise sustainability reports may continue to be criticized for their lack of consistency and usefulness.

This study is subject to a number of potential limitations. First, we are limited to examining those firms in which performance measures within CEO compensation contracts are

observable. Therefore, our results are only generalizable to publicly listed firms. Second, we are also unable to examine those firms that contract on CSR but do not report on CSR performance. Third, we are unable to perform a more detailed examination of the weights placed on CSR performance measures within CEO compensation contracts due to limited disclosures. Last, in the instance of measurement changes, we cannot observe what the restated line-item would be in year t under the old measurement system. Therefore, comparative performance is measured in relation to the original and restated number reported in year $t-1$ and the current reported number in year t . We call for future research in other countries to resolve these potential limitations and confirm our main results. Furthermore, future research may wish to investigate whether the characteristics of restatements observed in this study change following the issuance of sustainability reporting standards by the ISSB.

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FIGURES

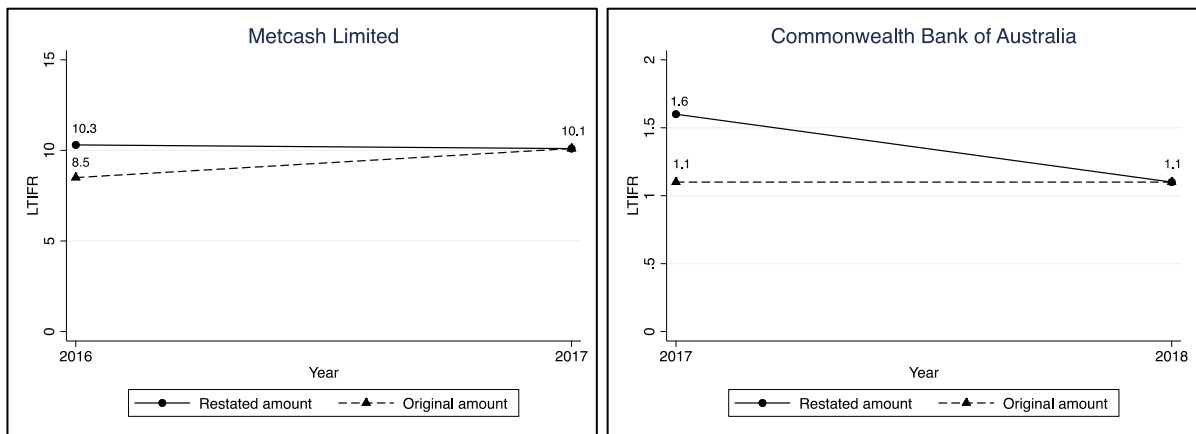


Figure 1: Visual representation of restatement to 2016 LTIFR by Metcash Limited in 2017 and restatement to 2017 LTIFR by Commonwealth Bank of Australia in 2018. These are examples of unfavorable restatements where improved comparative performance can be observed from year $t-1$ to year t after the restatement.

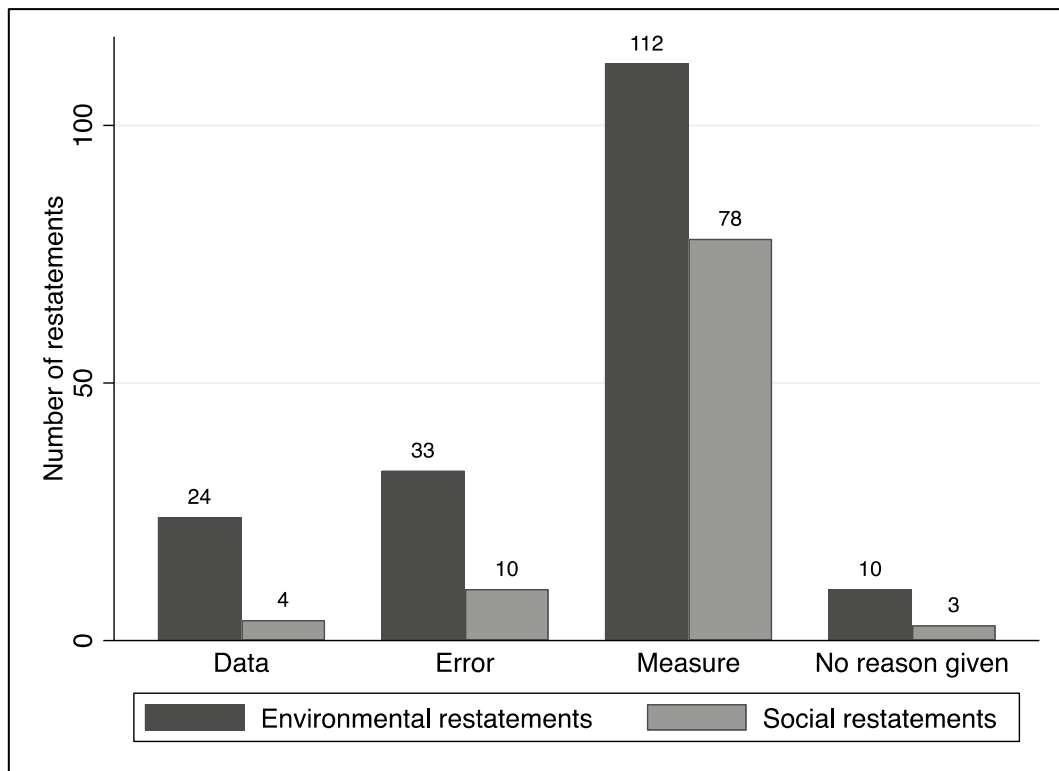


Figure 2: Reasons as to why line-items are being restated. This is based on the sample of 274 line-item restatements, 28 of which are due to data updates, 43 due to error, 190 due to measurement changes.

TABLES

Table 1: Sample distribution

Panel A: CSR reporting by year

Year	Full Sample		Report on CSR		Separate CSR report		Integrated CSR		Restatements	
	N	%	N	%	N	%	N	%	N	%
2004	14	0.89	3	21.43	1	33.33	2	66.67	0	0.00
2005	33	2.11	8	24.24	2	25.00	6	75.00	0	0.00
2006	31	1.98	7	22.58	2	28.57	5	71.43	0	0.00
2007	37	2.36	7	18.92	4	57.14	3	42.86	1	14.29
2008	34	2.17	10	29.41	5	50.00	5	50.00	1	10.00
2009	39	2.49	12	30.77	4	33.33	8	66.67	1	8.33
2010	51	3.25	15	29.41	8	53.33	7	46.67	1	6.67
2011	60	3.83	18	30.00	8	44.44	10	55.56	3	16.67
2012	71	4.53	29	40.85	11	37.93	18	62.07	5	17.24
2013	98	6.25	41	41.84	15	36.59	26	63.41	7	17.07
2014	107	6.83	44	41.12	20	45.45	24	54.55	7	15.91
2015	117	7.47	51	43.59	23	45.10	28	54.90	5	9.80
2016	106	6.76	45	42.45	25	55.56	20	44.44	9	20.00
2017	216	13.78	97	44.91	61	62.89	36	37.11	18	18.56
2018	226	14.42	115	50.88	73	63.48	42	36.52	13	11.30
2019	133	8.49	79	59.40	48	60.76	31	39.24	12	15.19
2020	194	12.38	93	47.94	67	72.04	26	27.96	8	8.60
Total	1,567	100.00	674	43.01	377	55.93	297	44.07	91	13.5

Panel B: CSR contracting by year

Year	<i>CONTRACT_CSR</i>		<i>CONTRACT_SOCIAL</i>		<i>CONTRACT_ENVIRO</i>	
	N	%	N	%	N	%
2004	6	42.86	6	100.00	4	66.67
2005	14	42.42	14	100.00	8	57.14
2006	13	41.94	13	100.00	6	46.15
2007	16	43.24	16	100.00	6	37.50
2008	11	32.35	11	100.00	4	36.36
2009	15	38.46	15	100.00	6	40.00
2010	18	35.29	18	100.00	8	44.44
2011	26	43.33	26	100.00	8	30.77
2012	30	42.25	29	96.67	9	30.00
2013	36	36.73	35	97.22	13	36.11
2014	47	43.93	45	95.74	13	27.66
2015	49	41.88	48	97.96	12	24.49
2016	50	47.17	49	98.00	14	28.00
2017	95	43.98	91	95.79	31	32.63
2018	99	43.81	97	97.98	38	38.38
2019	53	39.85	52	98.11	23	43.40
2020	110	56.70	105	95.45	50	45.45
Total	688	43.91	670	97.38	253	36.77

Panel C: Distribution of firms that contract and report on CSR

		Report on CSR		
		0	1	Total
Contract on CSR	0	573	306	879
	1	320	368	688
Total		893	674	1,567

Panel D: Distribution by industry

	Full sample		Report on CSR		Contract on CSR		RESTATEMENT		CONTRACT_ SOCIAL		CONTRACT_ ENVIRO	
	N	%	N	%	N	%	N	%	N	%	N	%
Communication Services	41	2.62	17	2.52	8	0.51	1	1.10	8	1.19	0	0.00
Consumer Discretionary	148	9.44	43	6.38	65	4.15	6	6.59	64	9.50	13	1.93
Consumer Staples	109	6.96	52	7.72	60	3.83	5	5.49	60	8.90	17	2.52
Energy	132	8.42	49	7.27	66	4.21	1	1.10	64	9.50	40	5.93
Financials	158	10.08	65	9.64	34	2.17	15	16.48	33	4.90	6	0.89
Health Care	80	5.11	28	4.15	29	1.85	3	3.29	28	4.15	9	1.34
Industrials	217	13.85	100	14.84	83	5.30	5	5.49	82	12.17	19	2.82
Information Technology	45	2.87	11	1.63	2	0.13	0	0.00	2	0.30	0	0.00
Materials	426	27.19	218	32.34	252	16.08	37	40.65	247	36.65	114	16.91
Real Estate	159	10.15	68	10.09	64	4.08	10	10.99	57	8.46	29	4.30
Utilities	52	3.32	23	3.41	25	1.60	8	8.79	25	3.71	6	0.89
Total	1,567	100.00	674	100.00	688	43.91	91	13.50	670	99.41	253	37.54

Table 2: Descriptive statistics

Variable	N	Mean	SD	Min	Max
<i>Restatement variables</i>					
<i>RESTATEMENT</i>	674	0.135	0.342	0.000	1.000
<i>NUMBER RESTATEMENT</i>	674	0.346	1.321	0.000	18.000
<i>%RESTATE_IMPROVED</i>	674	0.083	0.261	0.000	1.000
<i>%RESTATE_WORSE</i>	674	0.038	0.172	0.000	1.000
<i>%RESTATE_UNFAVORABLE</i>	674	0.083	0.262	0.000	1.000
<i>%RESTATE_FAVORABLE</i>	674	0.037	0.172	0.000	1.000
<i>%RESTATE_SOCIAL</i>	674	0.052	0.218	0.000	1.000
<i>%RESTATE_ENVIRO</i>	674	0.083	0.272	0.000	1.000
<i>%RESTATE_ERROR</i>	674	0.016	0.104	0.000	1.000
<i>%RESTATE_MEASURE</i>	674	0.095	0.290	0.000	1.000
<i>%RESTATE_DATA</i>	674	0.017	0.119	0.000	1.000
<i>Compensation variables</i>					
<i>STI</i>	674	488,812.800	420,773.500	9,687.000	2,477,746.000
<i>lnSTI</i>	674	9.558	5.958	0.000	14.917
<i>%CONTRACT_CSR</i>	431 ^a	0.043	0.085	0.000	0.400
<i>CONTRACT_CSR</i>	674	0.546	0.498	0.000	1.000
<i>CONTRACT_SOCIAL</i>	674	0.534	0.499	0.000	1.000
<i>CONTRACT_ENVIRO</i>	674	0.203	0.403	0.000	1.000
<i>MATCH</i>	674	0.059	0.236	0.000	1.000
<i>Firm characteristics</i>					
<i>ASSETS (million)</i>	674	22,100.000	121,000.000	33.900	1,040,000.000
<i>lnASSETS</i>	674	17.825	8.308	0.000	27.514
<i>lnPPE</i>	674	16.629	6.968	0.000	25.111
<i>ROA</i>	674	0.054	0.074	-0.305	0.290
<i>RETRUN</i>	674	0.074	0.424	-0.769	2.333
<i>LEVERAGE</i>	674	0.397	0.193	0.011	1.257
<i>MB</i>	674	2.318	2.996	0.000	17.860
<i>lnCASH</i>	674	16.894	5.612	0.000	22.114
<i>sd5ROA</i>	674	0.034	0.046	0.000	0.271
<i>SENSITIVE</i>	674	0.396	0.489	0.000	1.000
<i>CSR performance and monitoring</i>					
<i>AUDITED</i>	674	0.227	0.419	0.000	1.000
<i>BIG4</i>	674	0.139	0.347	0.000	1.000
<i>GRI</i>	674	0.065	0.247	0.000	1.000
<i>YEARS CSR</i>	674	3.772	4.497	0.000	19.000
<i>SOCIAL PERF</i>	674	40.268	27.153	0.000	96.848

<i>ENVIRO_PERF</i>	674	31.399	27.498	0.000	95.991
<i>TARGETS</i>	674	0.418	0.494	0.000	1.000
<i>GOVERNANCE</i>	674	50.339	29.741	0.000	99.351
<i>CEO characteristics</i>					
<i>FEMALE</i>	674	0.053	0.225	0.000	1.000
<i>CEO AGE (natural form)</i>	674	54.083	6.998	33.000	79.000
<i>CEO AGE</i>	674	2.464	1.956	0.000	4.234
<i>CEO SHARES</i>	674	0.026	0.069	0.000	0.490
<i>CEO TENURE</i>	674	5.141	4.605	0.000	26.000
<i>CEO SALARY (natural form)</i>	674	1,166,596.000	678,629.900	0.000	3,308,557.000
<i>CEO SALARY</i>	674	13.845	0.649	11.125	15.012

This table presents the summary statistics for all main variables used in this study. ^aThe sample size is reduced for this variable because some firms that contract on CSR do not disclose the assigned weighting, therefore we exclude these observations. However, firms that do not contract on CSR have a weighting of zero and are included. All continuous variables are winsorized at the top and bottom 1%.

Table 3: Association between CSR restatements and CSR contracting

Panel A: CSR contracting in current year (t)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	<i>RESTATEMENT</i>				<i>%RESTATE_SOCIAL</i>				<i>%RESTATE_ENVIRO</i>			
<i>CONTRACT_CSR</i>	0.741*** (3.507)				0.045** (3.163)				0.006 (0.404)			
<i>CONTRACT_SOCIAL</i>		0.731*** (3.141)		0.574** (2.548)		0.048** (3.125)		0.048** (2.574)		0.005 (0.380)		-0.006 (-0.339)
<i>CONTRACT_ENVIRO</i>			0.719 (1.188)	0.455 (0.717)			0.023 (1.216)	-0.001 (-0.034)			0.033 (0.895)	0.036 (0.853)
<i>AUDITED</i>	2.089*** (5.925)	2.091*** (5.966)	2.077*** (6.429)	2.095*** (5.851)	0.147*** (5.028)	0.148*** (5.009)	0.147*** (5.058)	0.148*** (4.972)	0.126*** (4.259)	0.126*** (4.260)	0.125*** (4.182)	0.125*** (4.213)
<i>GRI</i>	1.888*** (3.168)	1.887*** (3.190)	1.874*** (2.890)	1.924*** (3.234)	-0.032 (-0.725)	-0.030 (-0.686)	-0.032 (-0.714)	-0.030 (-0.674)	0.051 (0.823)	0.051 (0.830)	0.049 (0.753)	0.049 (0.746)
<i>SENSITIVE</i>	-0.080 (-0.217)	-0.065 (-0.172)	0.254 (0.545)	-0.120 (-0.282)	0.025 (1.531)	0.025 (1.511)	0.042*** (3.616)	0.025 (1.586)	-0.007 (-0.433)	-0.006 (-0.394)	-0.012 (-0.701)	-0.009 (-0.596)
<i>GOVERNANCE</i>	0.029** (2.377)	0.028** (2.407)	0.027** (2.234)	0.027** (2.361)	0.000 (0.568)	0.000 (0.584)	0.000 (0.428)	0.000 (0.565)	0.001** (2.718)	0.001** (2.721)	0.001** (3.039)	0.001** (3.108)
<i>YEARS_CSR</i>	-0.012 (-0.575)	-0.011 (-0.561)	-0.012 (-0.576)	-0.013 (-0.504)	-0.000 (-0.189)	-0.000 (-0.156)	-0.000 (-0.119)	-0.000 (-0.146)	0.001 (0.527)	0.001 (0.545)	0.001 (0.295)	0.001 (0.303)
<i>SOCIAL_PERF</i>	-0.005 (-0.468)	-0.005 (-0.457)	-0.004 (-0.377)	-0.004 (-0.361)	0.000 (0.802)	0.000 (0.788)	0.000 (0.750)	0.000 (0.741)	-0.000 (-0.340)	-0.000 (-0.342)	-0.000 (-0.252)	-0.000 (-0.247)
<i>ENV_PERF</i>	0.024* (1.720)	0.024* (1.706)	0.024* (1.747)	0.024* (1.656)	0.000 (0.207)	0.000 (0.177)	0.000 (0.250)	0.000 (0.176)	0.001 (1.589)	0.001 (1.594)	0.001 (1.516)	0.001 (1.532)
<i>TARGETS</i>	-0.464 (-1.250)	-0.459 (-1.251)	-0.445 (-1.229)	-0.460 (-1.282)	-0.032 (-1.638)	-0.032 (-1.670)	-0.030 (-1.585)	-0.032 (-1.670)	-0.010 (-0.360)	-0.010 (-0.361)	-0.011 (-0.411)	-0.011 (-0.398)
<i>lnASSETS</i>	-0.004 (-0.243)	-0.004 (-0.223)	-0.007 (-0.432)	-0.005 (-0.261)	-0.002 (-1.460)	-0.002 (-1.477)	-0.002 (-1.292)	-0.002 (-1.469)	0.001 (0.696)	0.001 (0.695)	0.001 (0.743)	0.001 (0.738)
<i>lnPPE</i>	-0.091** (-2.479)	-0.090** (-2.464)	-0.098** (-2.512)	-0.091** (-2.434)	-0.001 (-1.295)	-0.001 (-1.243)	-0.002* (-1.989)	-0.001 (-1.242)	-0.002 (-1.151)	-0.002 (-1.138)	-0.002 (-1.150)	-0.002 (-1.155)
<i>Constant</i>	-6.079*** (-7.130)	-6.052*** (-7.288)	-5.857*** (-6.539)	-6.064*** (-7.245)	0.002 (0.104)	0.001 (0.064)	0.010 (0.417)	0.001 (0.058)	-0.020 (-0.610)	-0.020 (-0.614)	-0.013 (-0.440)	-0.012 (-0.406)
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
N	674	674	674	674	674	674	674	674	674	674	674	674
Psd. R2	0.312	0.312	0.309	0.314								
Adj. R2					0.156	0.157	0.148	0.157	0.140	0.140	0.142	0.142

Panel B: CSR contracting in prior year (t-1)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	<i>RESTATEMENT</i>				<i>%RESTATE_SOCIAL</i>				<i>%RESTATE_ENVIRO</i>			
<i>CONTRACT_CSR</i> _(t-1)	0.194 (0.995)				0.025 (1.397)				0.014 (0.759)			
<i>CONTRACT_SOCIAL</i> _(t-1)		0.204 (1.042)		0.023 (0.083)		0.026 (1.408)		0.023 (1.325)		0.015 (0.815)		0.005 (0.262)
<i>CONTRACT_ENVIRO</i> _(t-1)			0.572 (1.179)	0.558 (0.924)			0.025 (1.615)	0.010 (0.419)			0.035 (0.748)	0.031 (0.594)
<i>AUDITED</i>	2.059*** (8.343)	2.058*** (8.335)	2.061*** (8.548)	2.059*** (8.547)	0.146*** (5.875)	0.146*** (5.865)	0.147*** (5.134)	0.146*** (5.298)	0.125*** (4.228)	0.124*** (4.216)	0.125*** (4.280)	0.125*** (4.195)
<i>GRI</i>	2.143*** (3.781)	2.146*** (3.784)	2.208*** (3.385)	2.212*** (3.666)	-0.021 (-0.497)	-0.021 (-0.499)	-0.025 (-0.576)	-0.020 (-0.459)	0.056 (0.905)	0.057 (0.909)	0.059 (1.019)	0.060 (1.005)
<i>SENSITIVE</i>	0.685 (1.529)	0.681 (1.519)	0.680 (1.589)	0.673 (1.555)	0.038 (0.708)	0.038 (0.708)	0.045*** (4.362)	0.038*** (3.601)	-0.009 (-0.533)	-0.009 (-0.557)	-0.008 (-0.505)	-0.009 (-0.566)
<i>GOVERNANCE</i>	0.014 (1.229)	0.014 (1.231)	0.012 (1.034)	0.012 (1.027)	0.000 (0.414)	0.000 (0.424)	0.000 (0.499)	0.000 (0.600)	0.001** (2.677)	0.001** (2.673)	0.001** (2.826)	0.001** (2.815)
<i>YEARS_CSR</i>	-0.008 (-0.351)	-0.008 (-0.352)	-0.008 (-0.330)	-0.008 (-0.334)	-0.000 (-0.032)	-0.000 (-0.021)	-0.000 (-0.083)	-0.000 (-0.045)	0.001 (0.536)	0.001 (0.545)	0.001 (0.377)	0.001 (0.378)
<i>SOCIAL_PERF</i>	-0.005 (-0.391)	-0.005 (-0.390)	-0.004 (-0.273)	-0.004 (-0.273)	0.000 (0.592)	0.000 (0.594)	0.000 (0.749)	0.000 (0.675)	-0.000 (-0.355)	-0.000 (-0.355)	-0.000 (-0.270)	-0.000 (-0.283)
<i>ENV_PERF</i>	0.022* (1.669)	0.022* (1.669)	0.021 (1.560)	0.021 (1.586)	0.000 (0.294)	0.000 (0.285)	0.000 (0.234)	0.000 (0.208)	0.001 (1.616)	0.001 (1.616)	0.001 (1.509)	0.001 (1.539)
<i>TARGETS</i>	-0.181 (-0.498)	-0.181 (-0.497)	-0.165 (-0.450)	-0.164 (-0.449)	-0.030 (-1.339)	-0.030 (-1.348)	-0.030 (-1.571)	-0.030 (-1.561)	-0.010 (-0.356)	-0.010 (-0.359)	-0.010 (-0.372)	-0.010 (-0.371)
<i>lnASSETS</i>	-0.013 (-0.733)	-0.013 (-0.729)	-0.013 (-0.763)	-0.013 (-0.774)	-0.002 (-1.607)	-0.002 (-1.602)	-0.002 (-1.347)	-0.002 (-1.400)	0.001 (0.702)	0.001 (0.704)	0.001 (0.729)	0.001 (0.728)
<i>lnPPE</i>	-0.047 (-1.398)	-0.047 (-1.397)	-0.047 (-1.384)	-0.047 (-1.396)	-0.002 (-0.957)	-0.002 (-0.960)	-0.002* (-2.028)	-0.002* (-1.996)	-0.002 (-1.129)	-0.002 (-1.123)	-0.002 (-1.163)	-0.002 (-1.130)
<i>Constant</i>	-5.922*** (-8.858)	-5.923*** (-8.856)	-5.936*** (-8.435)	-5.938*** (-8.753)	0.010 (0.076)	0.010 (0.075)	0.007 (0.323)	0.010 (0.422)	-0.017 (-0.527)	-0.016 (-0.525)	-0.016 (-0.523)	-0.015 (-0.497)
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

N	674	674	674	674	674	674	674	674	674	674	674	674
Psd R2	0.292	0.292	0.294	0.294								
Adj R2					0.149	0.149	0.148	0.149	0.140	0.140	0.141	0.141

This table presents the results for Model (1). The dependent variable is *RESTATEMENT* an indicator variable coded 1 if the firm makes a restatement of prior year's CSR performance in the current year, 0 otherwise. In Panel A, the key independent variables *CONTRACT_CSR*, *CONTRACT_SOCIAL* and *CONTRACT_ENVIRO* represent CSR contracting in year *t*. In Panel B, the key independent variables *CONTRACT_CSR*, *CONTRACT_SOCIAL* and *CONTRACT_ENVIRO* represent CSR contracting in the prior year *t-1*. Standard errors are clustered by firm. All other variables are defined in Appendix A. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively.

Table 4: Association between CSR contracting and comparative CSR performance

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		%RESTATE_IMPROVED				%RESTATE_WORSE		
<i>CONTRACT_CSR</i>	0.048*** (3.881)				0.005 (0.997)			
<i>CONTRACT_SOCIAL</i>		0.048*** (4.012)		0.039** (2.570)		0.005 (0.922)		0.004 (0.865)
<i>CONTRACT_ENVIRO</i>			0.050 (1.221)	0.030 (0.680)			0.006 (0.529)	0.004 (0.356)
<i>AUDITED</i>	0.177*** (5.017)	0.177*** (5.034)	0.177*** (5.044)	0.177*** (4.988)	0.061** (2.498)	0.062** (2.495)	0.061** (2.497)	0.061** (2.486)
<i>GRI</i>	-0.063* (-2.174)	-0.062* (-2.110)	-0.065* (-2.063)	-0.064* (-2.014)	0.049 (1.012)	0.049 (1.017)	0.049 (1.001)	0.049 (1.004)
<i>SENSITIVE</i>	-0.005 (-0.261)	-0.004 (-0.215)	0.008 (0.310)	-0.007 (-0.323)	0.007 (0.963)	0.007 (0.929)	0.008 (1.186)	0.006 (0.921)
<i>GOVERNANCE</i>	0.001** (2.439)	0.001** (2.475)	0.001** (2.645)	0.001** (2.694)	0.000 (0.664)	0.000 (0.664)	0.000 (0.596)	0.000 (0.599)
<i>YEARS_CSR</i>	0.000 (0.080)	0.000 (0.114)	0.000 (0.026)	0.000 (0.021)	0.003 (1.633)	0.003 (1.646)	0.003 (1.605)	0.003 (1.593)
<i>SOCIAL_PERF</i>	-0.000 (-0.116)	-0.000 (-0.128)	0.000 (0.106)	0.000 (0.018)	-0.000 (-0.352)	-0.000 (-0.353)	-0.000 (-0.323)	-0.000 (-0.331)
<i>ENV_PERF</i>	0.001 (1.365)	0.001 (1.335)	0.001 (1.276)	0.001 (1.266)	0.000 (0.738)	0.000 (0.736)	0.000 (0.720)	0.000 (0.722)
<i>TARGETS</i>	-0.021 (-0.794)	-0.022 (-0.809)	-0.021 (-0.771)	-0.022 (-0.823)	-0.027* (-2.115)	-0.027* (-2.120)	-0.027* (-2.142)	-0.027* (-2.140)
<i>lnASSETS</i>	-0.001 (-0.536)	-0.001 (-0.543)	-0.001 (-0.466)	-0.001 (-0.507)	-0.001 (-1.443)	-0.001 (-1.447)	-0.001 (-1.464)	-0.001 (-1.461)
<i>lnPPE</i>	-0.002* (-2.132)	-0.002* (-2.123)	-0.003** (-2.892)	-0.002* (-2.160)	-0.000 (-0.162)	-0.000 (-0.159)	-0.000 (-0.206)	-0.000 (-0.165)
<i>Constant</i>	-0.002 (-0.112)	-0.003 (-0.156)	0.011 (0.658)	0.004 (0.287)	0.012 (0.762)	0.012 (0.757)	0.014 (0.839)	0.013 (0.772)
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES

N	674	674	674	674	674	674	674	674
Adj R2	0.150	0.151	0.147	0.152	0.086	0.086	0.086	0.086

This table presents the results for Model (2). In columns (1) to (4) the dependent variable is *%RESTATE_IMPROVED*, which is measured as the number of restatements relating to year *t-1* that resulted in improved comparative performance, divided by the total number of restatements relating to year *t-1* that were restated in year *t*. In columns (5) to (8) the dependent variable is *%RESTATE_WORSE*, which is measured as the number of restatements relating to year *t-1* that resulted in worse comparative performance, divided by the total number of restatements relating to year *t-1* that were restated in year *t*. It is worth noting that these two dependent variables are not the direct inverse of each other as the direction of some restatements cannot be determined. All other variables are defined in Appendix A. Standard errors are clustered by firm. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively.

Table 5: Association between cash bonus payout and CSR restatements

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	<i>lnSTI</i>									
<i>RESTATEMENT</i>	0.582 (1.116)									
<i>MATCH</i>		1.458*** (3.711)								
<i>%RESTATE_IMPROVED</i>			0.930* (1.819)	2.041 (1.326)						
<i>%RESTATE_WORSE</i>					-0.999 (-0.760)	-1.226 (-0.593)				
<i>%RESTATE_SOCIAL</i>							1.837*** (4.164)	2.046 (0.859)		
<i>%RESTATE_ENVIRO</i>									-0.328 (-0.297)	0.772 (0.580)
<i>PERF_SOCIAL</i>	-0.010 (-0.579)	-0.009 (-0.567)	-0.000 (-0.023)	0.019 (0.740)	-0.019 (-0.963)	-0.018 (-0.792)	0.007 (0.322)	0.041 (1.511)	0.008 (0.379)	0.042 (1.516)
<i>PERF_ENVIRO</i>	-0.006 (-0.282)	-0.006 (-0.246)	-0.006 (-0.270)	-0.066* (-1.887)	0.004 (0.097)	-0.065* (-2.154)	-0.005 (-0.153)	-0.079** (-2.305)	-0.004 (-0.124)	-0.081** (-2.358)
<i>TARGETS</i>	0.341 (0.312)	0.292 (0.266)	0.606 (0.539)	1.027 (0.585)	1.008 (0.936)	2.242* (1.829)	1.113 (1.243)	1.878 (1.553)	1.135 (1.227)	1.912 (1.494)
<i>lnPPE</i>	-0.016 (-0.280)	-0.014 (-0.251)	-0.096* (-2.166)	-0.055 (-0.677)	-0.096 (-1.126)	-0.001 (-0.007)	-0.106* (-1.960)	-0.038 (-0.458)	-0.114* (-1.937)	-0.038 (-0.460)
<i>ROA</i>	9.972*** (5.127)	9.869*** (5.182)	8.575*** (3.402)	9.741** (2.266)	10.343** (2.476)	13.895*** (3.192)	8.117** (3.044)	9.532** (2.770)	8.227** (2.746)	9.833** (2.834)
<i>RETURN</i>	1.257** (2.472)	1.275** (2.469)	1.565** (2.982)	2.110** (3.043)	0.951* (1.961)	1.013* (1.936)	1.084** (2.436)	1.054* (1.863)	1.036** (2.312)	1.057* (1.897)
<i>lnASSETS</i>	-0.011 (-0.262)	-0.013 (-0.311)	-0.008 (-0.076)	0.148 (0.757)	-0.019 (-0.202)	0.146 (0.948)	-0.002 (-0.021)	0.173 (0.855)	-0.006 (-0.057)	0.151 (0.776)
<i>LEVERAGE</i>	-0.802 (-0.618)	-0.814 (-0.605)	-0.246 (-0.214)	0.766 (0.272)	-1.545 (-1.143)	0.192 (0.136)	-0.614 (-0.483)	0.501 (0.172)	-0.616 (-0.467)	0.645 (0.221)
<i>M/B</i>	0.180 (1.287)	0.184 (1.325)	0.044 (0.550)	-0.006 (-0.097)	0.135 (1.405)	0.051 (0.469)	0.077 (0.871)	0.001 (0.011)	0.075 (0.847)	-0.002 (-0.021)
<i>lnCASH</i>	0.022	0.017	0.071	-0.030	0.128	0.078	0.104*	-0.003	0.102	-0.034

<i>sd5ROA</i>	(0.619)	(0.496)	(1.768)	(-0.343)	(1.619)	(0.726)	(1.907)	(-0.023)	(1.756)	(-0.328)
	-0.151	-0.443	-2.483	1.906	-1.300	1.676	-5.600	3.191	-4.917	3.553
	(-0.023)	(-0.068)	(-0.428)	(0.224)	(-0.262)	(0.207)	(-0.930)	(0.475)	(-0.840)	(0.526)
<i>GOVERNANCE</i>	0.017	0.016	0.018	0.043	0.008	0.034	0.005	0.025	0.006	0.025
	(0.790)	(0.721)	(0.639)	(1.511)	(0.271)	(1.596)	(0.201)	(1.410)	(0.239)	(1.290)
<i>CEO FEMALE</i>	0.196	0.227	-0.566	-0.376	0.248	1.464	-0.154	0.536	-0.224	0.577
	(0.218)	(0.258)	(-0.538)	(-0.136)	(0.183)	(0.513)	(-0.146)	(0.213)	(-0.210)	(0.214)
<i>CEO AGE</i>	0.147	0.151	0.121	0.110	0.037	-0.356	0.036	0.023	0.037	-0.004
	(1.102)	(1.147)	(0.740)	(0.312)	(0.185)	(-0.871)	(0.187)	(0.056)	(0.189)	(-0.009)
<i>CEO SHARES</i>	-124.623	-129.019	-120.608	208.726	-120.608	208.726	-121.621	207.372	-120.608	208.726
	(-0.555)	(-0.575)	(-0.528)	(0.683)	(-0.528)	(0.683)	(-0.534)	(0.679)	(-0.528)	(0.683)
<i>CEO TENURE</i>	-0.008	-0.010	0.009	-0.047	-0.049	-0.188	0.000	-0.060	0.003	-0.069
	(-0.080)	(-0.097)	(0.115)	(-0.304)	(-0.470)	(-1.083)	(0.002)	(-0.405)	(0.032)	(-0.448)
<i>CEO SALARY</i>	1.921***	1.926***	1.488*	1.685*	2.011**	2.647***	1.783**	2.267**	1.849**	2.323***
	(3.486)	(3.424)	(1.857)	(2.112)	(2.763)	(4.315)	(2.354)	(2.989)	(2.414)	(3.235)
<i>Constant</i>	-19.803**	-19.698**	-12.012	-18.324*	-19.413**	-31.969***	-13.435	-25.086***	-14.209*	-24.758***
	(-2.901)	(-2.817)	(-1.309)	(-2.138)	(-2.653)	(-4.748)	(-1.724)	(-3.663)	(-1.817)	(-3.659)
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Contracts on CSR			YES	NO	YES	NO	YES	NO	YES	NO
N	674	674	367	307	367	307	367	307	367	307
Adj. R2	0.177	0.179	0.126	0.198	0.090	0.182	0.138	0.214	0.134	0.212
Chi2				0.81**		0.61		7.68***		0.02

This table presents the results for Model (3) where *lnSTI* is the dependent variable across all columns. *lnSTI* is measured as the natural logarithm of the CEO's STI for the year. All other variables are defined in Appendix A. Standard errors are clustered by firm. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively.

Table 6: Main results using entropy balanced subsample*Panel A: Descriptive statistics of matched samples*

	Treatment group (<i>CONTRACT_CSR=1</i>)			Control group (<i>CONTRACT_CSR=0</i>)		
	Mean	Variance	Skewness	Mean	Variance	Skewness
<i>AUDITED</i>	0.266	0.196	1.057	0.266	0.196	1.057
<i>GRI</i>	0.082	0.075	3.059	0.082	0.075	3.059
<i>SENSITIVE</i>	0.473	0.250	0.109	0.473	0.250	0.109
<i>GOVERNANCE</i>	50.320	986.500	-0.437	50.320	862.100	-0.512
<i>YEARS_CSR</i>	4.193	22.560	0.931	4.193	21.110	0.845
<i>SOCIAL_PERF</i>	40.140	758.800	0.048	40.140	793.100	0.139
<i>ENV_PERF</i>	33.490	754.400	0.202	33.490	880.300	0.364
<i>TARGETS</i>	0.451	0.248	0.197	0.451	0.248	0.197
<i>lnASSETS</i>	17.880	68.150	-1.632	17.880	70.160	-1.578
<i>lnPPE</i>	16.270	60.790	-1.461	16.270	51.780	-1.609
<i>ROA</i>	0.051	0.005	-1.026	0.051	0.005	-0.501
<i>RETURN</i>	0.049	0.168	2.259	0.049	0.160	2.710
<i>LEVERAGE</i>	0.322	0.055	0.075	0.322	0.056	0.033
<i>MB</i>	2.129	5.585	2.730	2.129	9.233	3.276
<i>CASH</i>	16.690	37.270	-2.191	16.690	34.190	-2.354
<i>SD5ROA</i>	0.035	0.002	2.824	0.035	0.002	2.929
<i>FEMALE</i>	0.057	0.054	3.819	0.057	0.054	3.819
<i>CEO AGE</i>	2.473	3.814	-0.476	2.473	3.859	-0.463
<i>CEO TENURE</i>	2.028	12.820	2.291	2.028	12.820	2.291
<i>CEO SALARY</i>	13.740	0.768	-4.400	13.740	0.768	-4.400

Panel B: Association between CSR restatement and CSR contracting

VARIABLES	(1) <i>RESTATEMENT</i>	(2)	(3) <i>%RESTATE_ IMPROVED</i>	(4)	(5) <i>%RESTATE_ WORSE</i>	(6)	(7) <i>%RESTATE_ SOCIAL</i>	(8)	(9) <i>%RESTATE_ ENVIRO</i>	(10)
<i>CONTRACT_CSR</i>	0.756** (2.290)		0.062*** (2.756)		0.007 (0.412)		0.052*** (3.136)		0.017 (0.633)	
<i>CONTRACT_SOCIAL</i>		0.573* (1.769)		0.050** (2.197)		0.004 (0.200)	0.052*** (2.615)			0.002 (0.066)
<i>CONTRACT_ENVIRO</i>		0.386 (0.982)		0.033 (0.949)		0.009 (0.432)	0.007 (0.251)			0.038 (1.057)
<i>AUDITED</i>	1.491*** (3.479)	1.489*** (3.454)	0.131*** (2.679)	0.131*** (2.670)	0.033 (1.164)	0.033 (1.160)	0.113*** (3.468)	0.114*** (3.472)	0.093* (1.832)	0.092* (1.821)
<i>GRI</i>	1.384* (1.947)	1.397* (1.945)	-0.067 (-1.058)	-0.067 (-1.055)	0.067 (0.985)	0.067 (0.981)	-0.033 (-0.723)	-0.032 (-0.704)	0.040 (0.459)	0.039 (0.448)
<i>SENSITIVE</i>	0.804 (0.619)	0.780 (0.606)	0.013 (0.330)	0.010 (0.259)	0.051 (1.188)	0.050 (1.175)	0.043* (1.729)	0.043* (1.750)	0.032 (0.482)	0.027 (0.417)
<i>GOVERNANCE</i>	0.017 (1.272)	0.016 (1.124)	0.001** (2.155)	0.001** (2.028)	0.000 (0.187)	0.000 (0.153)	-0.000 (-0.206)	-0.000 (-0.216)	0.001 (1.544)	0.001 (1.406)
<i>YEARS_CSR</i>	0.011 (0.268)	0.010 (0.250)	0.002 (0.420)	0.001 (0.372)	0.005 (1.509)	0.005 (1.475)	-0.001 (-0.187)	-0.001 (-0.177)	0.005 (1.074)	0.005 (1.010)
<i>SOCIAL_PERF</i>	-0.003 (-0.211)	-0.002 (-0.167)	-0.000 (-0.097)	-0.000 (-0.024)	-0.000 (-0.180)	-0.000 (-0.147)	0.001 (1.009)	0.001 (0.984)	-0.000 (-0.493)	-0.000 (-0.406)
<i>ENV_PERF</i>	0.028*** (2.758)	0.027*** (2.680)	0.001 (1.420)	0.001 (1.353)	0.001 (0.722)	0.001 (0.707)	0.000 (0.570)	0.000 (0.527)	0.001 (1.480)	0.001 (1.440)
<i>TARGETS</i>	-0.571 (-1.158)	-0.581 (-1.172)	-0.027 (-0.728)	-0.028 (-0.755)	-0.049 (-1.423)	-0.049 (-1.434)	-0.028 (-1.328)	-0.028 (-1.346)	-0.039 (-0.848)	-0.040 (-0.866)
<i>lnASSETS</i>	0.008 (0.478)	0.008 (0.461)	-0.000 (-0.099)	-0.000 (-0.077)	-0.000 (-0.193)	-0.000 (-0.183)	-0.001 (-1.159)	-0.001 (-1.168)	0.002 (1.250)	0.002 (1.282)
<i>lnPPE</i>	-0.052 (-1.173)	-0.051 (-1.155)	-0.003 (-1.385)	-0.003 (-1.399)	-0.000 (-0.042)	-0.000 (-0.050)	-0.001 (-0.542)	-0.001 (-0.527)	-0.002 (-0.719)	-0.002 (-0.746)
<i>Constant</i>	-6.985***	-6.883***	-0.047	-0.038	-0.047	-0.044	-0.025	-0.024	-0.098	-0.086

	(-4.892)	(-4.871)	(-1.010)	(-0.837)	(-1.016)	(-0.940)	(-0.599)	(-0.569)	(-1.373)	(-1.213)
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
N	674	674	674	674	674	674	674	674	674	674
Psd. R2	0.249	0.250								
Adj. R2			0.142	0.144	0.097	0.098	0.142	0.143	0.130	0.131

Panel C: Association between cash bonus payout and CSR restatements

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	<i>lnSTI</i>									
<i>RESTATEMENT</i>	0.568 (1.166)									
<i>MATCH</i>		1.375** (2.824)								
<i>%RESTATE_IMPROVED</i>			0.519* (1.849)	0.807 (0.688)						
<i>%RESTATE_WORSE</i>					-1.693 (-1.357)	-1.048 (-0.704)				
<i>%RESTATE_SOCIAL</i>							1.397** (2.582)	-1.009 (-0.332)		
<i>%RESTATE_ENVIRO</i>									-0.795 (-0.861)	0.303 (0.424)
<i>PERF_SOCIAL</i>	-0.023 (-1.331)	-0.023 (-1.323)	-0.009 (-0.429)	0.011 (0.470)	-0.031 (-1.651)	0.012 (0.488)	-0.010 (-0.463)	0.029 (1.016)	0.000 (0.013)	0.028 (1.034)
<i>PERF_ENVIRO</i>	-0.018 (-0.733)	-0.018 (-0.717)	-0.028 (-1.154)	-0.084** (-2.648)	0.015 (1.063)	-0.083** (-2.668)	-0.014 (-0.549)	-0.082** (-2.292)	-0.014 (-0.447)	-0.084** (-2.404)
<i>TARGETS</i>	0.852 (0.746)	0.832 (0.717)	1.444 (1.296)	2.480* (2.104)	-0.133 (-0.221)	2.454** (2.331)	1.284 (1.626)	2.693** (3.121)	1.644 (1.723)	2.672*** (3.407)
<i>lnPPE</i>	0.060 (1.158)	0.061 (1.191)	-0.026 (-0.599)	0.026 (0.382)	0.098 (0.823)	0.024 (0.356)	-0.026 (-0.505)	0.049 (0.667)	-0.064 (-0.960)	0.045 (0.686)
<i>ROA</i>	9.608*** (4.674)	9.541*** (4.701)	7.485** (2.447)	10.631** (2.324)	-3.301 (-0.558)	10.221** (2.304)	5.467 (1.526)	7.563 (1.429)	4.627 (1.072)	7.715 (1.490)
<i>RETURN</i>	1.472*** (3.461)	1.483*** (3.441)	1.923*** (4.020)	2.335*** (3.180)	1.092** (3.152)	2.265** (3.003)	1.158*** (3.520)	1.360* (1.877)	1.260** (2.987)	1.414* (2.033)
<i>lnASSETS</i>	-0.015 (-0.343)	-0.017 (-0.369)	-0.041 (-0.563)	0.114 (0.568)	0.245 (0.187)	0.108 (0.524)	-0.046 (-0.614)	0.104 (0.487)	-0.063 (-0.792)	0.113 (0.565)
<i>LEVERAGE</i>	-1.852 (-1.223)	-1.878 (-1.199)	-1.777 (-1.580)	0.052 (0.024)	-5.483* (-2.182)	0.121 (0.056)	-1.186 (-1.069)	-0.156 (-0.079)	-0.955 (-0.885)	-0.177 (-0.087)
<i>M/B</i>	0.192	0.196	0.066	0.019	0.270	0.013	0.071	0.009	0.079	0.013

	(1.363)	(1.402)	(0.941)	(0.346)	(1.396)	(0.207)	(1.010)	(0.156)	(1.170)	(0.223)
<i>lnCASH</i>	-0.017	-0.021	0.040	-0.090	-0.298	-0.087	0.033	-0.083	0.062	-0.077
	(-0.449)	(-0.568)	(1.015)	(-1.156)	(-1.050)	(-1.057)	(0.608)	(-0.819)	(1.134)	(-0.769)
<i>sd5ROA</i>	2.569	2.401	-3.249	2.934	-12.520	2.380	-6.178	7.281	-2.684	7.677
	(0.390)	(0.370)	(-0.465)	(0.393)	(-0.646)	(0.324)	(-1.071)	(1.025)	(-0.386)	(1.161)
<i>GOVERNANCE</i>	0.012	0.011	0.014	0.045*	0.059**	0.046*	0.005	0.028	0.007	0.030
	(0.688)	(0.637)	(0.588)	(1.861)	(3.109)	(1.824)	(0.289)	(1.046)	(0.336)	(1.348)
<i>CEO FEMALE</i>	0.300	0.330	0.188	1.164	4.424***	0.949	0.539	1.711	0.454	1.835
	(0.440)	(0.488)	(0.183)	(0.418)	(5.722)	(0.330)	(0.588)	(0.611)	(0.508)	(0.652)
<i>CEO AGE</i>	0.148	0.155	0.167	0.125	-0.296	0.157	0.201	0.175	0.146	0.165
	(0.942)	(0.997)	(0.896)	(0.550)	(-1.218)	(0.754)	(1.108)	(0.691)	(0.746)	(0.665)
<i>CEO SHARES</i>	29.442	23.899	-23.451	557.376*	158.119	575.235*				
	(0.131)	(0.107)	(-0.581)	(2.118)	(0.322)	(1.992)				
<i>CEO TENURE</i>	0.040	0.039	0.053	0.016	0.109	0.011	0.045	0.009	0.051	0.010
	(0.279)	(0.265)	(0.459)	(0.075)	(0.743)	(0.052)	(0.365)	(0.041)	(0.427)	(0.046)
<i>CEO SALARY</i>	1.982**	1.983**	1.576	1.517	3.027***	1.531	1.999*	2.173*	2.061*	2.147*
	(2.938)	(2.923)	(1.756)	(1.600)	(3.412)	(1.711)	(2.066)	(2.138)	(2.132)	(2.196)
<i>Constant</i>	-17.366*	-17.255*	-9.829	-16.612	-34.550	-16.686	-17.778	-22.486*	-15.827	-23.011*
	(-2.012)	(-1.989)	(-0.978)	(-1.342)	(-1.188)	(-1.432)	(-1.486)	(-1.929)	(-1.481)	(-1.929)
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Contracts on CSR			YES	NO	YES	NO	YES	NO	YES	NO
N	674	674	367	307	367	307	367	307	367	307
Adj. R2	0.191	0.193	0.139	0.298	0.290	0.189	0.103	0.262	0.140	0.262
Chi2				3.11**		0.22		0.58**		1.26

This table presents the results on an entropy balanced sample. Panel A presents the descriptive statistics on a matched sample of firms that do and firms that do not contract on CSR. Panel B Columns (1) and (2) present results on Model (1) where the independent variable is *RESTATEMENT*. Columns (3) to (4) and columns (5) to (6) present results on Model (2) where the independent variable is *%RESTATE_IMPROVED* and *%RESTATE_WORSE*, respectively. Finally, Columns (7) to (10) present results where *%RESTATE_SOCIAL* and *%RESTATE_ENVIRO* are applied as alternative dependent variable in Model (1). Panel C presents the results on Model (3) where the dependent variable is *lnSTI*. All other variables are defined in Appendix A. Standard errors are clustered by firm. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively.

APPENDIX

Appendix A: Variable definitions

Variable	Definition	Source
<i>RESTATEMENT</i>	An indicator variable coded 1 if firm i in year t discloses that a line-item relating to year $t-1$ has been restated, and 0 otherwise;	Hand collected from CSR report
<i>NUMBER RESTATEMENTS</i>	The number of line-items relating to year $t-1$ that were restated in the current year;	Hand collected from CSR report
<i>%RESTATE_IMPROVED</i>	The number of restatements relating to year $t-1$ that resulted in improved comparative performance, divided by the total number of restatements in year t . Restatements that result in improved comparative performance are those that cause the change in performance from year $t-1$ to year t to be in a positive direction and larger than if using the original reported number;	Hand collected from CSR report
<i>%RESTATE_WORSE</i>	The number of restatements relating to year $t-1$ that resulted in worse comparative performance, divided by the total number of restatements in year t . Restatements that result in worse comparative performance are those that cause the change in performance from year $t-1$ to year t to be in a negative direction and smaller than if using the original reported number;	Hand collected from CSR report
<i>%RESTATE_UNFAVORABLE</i>	The number of unfavorable restatements relating to year $t-1$ that were restated in year t , divided by the total number of restatements relating to year $t-1$ that were restated in year t . Unfavorable restatements are those that result in worse performance for year $t-1$ than was originally reported. It is worth noting that an unfavorable restatement can be either negative or positive, depending on the underlying measure;	Hand collected from CSR report
<i>%RESTATE_FAVORABLE</i>	The number of favorable restatements relating to year $t-1$, divided by the total number of restatements relating to year	Hand collected from CSR report

	<i>t-1</i> that were restated in year <i>t</i> . Favorable restatements are those that result in improved performance for year <i>t-1</i> than was originally reported;	
<i>%RESTATE_SOCIAL</i>	The number of restatements relating to year <i>t-1</i> that were social in nature, divided by the total number of restatements in year <i>t</i> ;	Hand collected from CSR report
<i>%RESTATE_ENVIRON</i>	The number of restatements relating to year <i>t-1</i> that were environmental in nature, divided by the total number of restatements in year <i>t</i> ;	Hand collected from CSR report
<i>%RESTATE_ERROR</i>	The number of restatements relating to year <i>t-1</i> that occurred due to errors made when reporting in year <i>t-1</i> , divided by the total number of restatements in year <i>t</i> ;	Hand collected from CSR report
<i>%RESTATE_MEASURE</i>	The number of restatements relating to year <i>t-1</i> that occurred due to measurement changes in year <i>t</i> , divided by the total number of restatements in year <i>t</i> ;	Hand collected from CSR report
<i>%RESTATE_DATA</i>	The number of restatements relating to year <i>t-1</i> that occurred due to new data becoming available after the release of the previous report, divided by the total number of restatements in year <i>t</i> ;	Hand collected from CSR report
<i>lnSTI</i>	The natural logarithm of the CEO's STI ('Bonus' in the Connect4 database);	Connect4
<i>CONTRACT_CSR</i>	An indicator variable coded 1 if the firm contracts on CSR in the CEOs short term incentive contract, 0 otherwise;	Hand collected from remuneration report
<i>%CONTRACT_CSR</i>	The relative weight placed on CSR-related performance measures in the CEO's STI contract;	Hand collected from remuneration report
<i>CONTRACT_SOCIAL</i>	An indicator variable coded 1 if the CSR related performance measure for the CEO is linked to social initiatives, 0 otherwise. For example, performance measures relating to safety and diversity;	Hand collected from remuneration report

<i>CONTRACT_ENVIRON</i>	An indicator variable coded 1 if the CSR related performance measure for the CEO is linked to environmental initiatives, 0 otherwise. For example, performance measures relating to carbon emission and water usage;	Hand collected from remuneration report
<i>MATCH</i>	An indicator variable coded 1 when at least one line-item matches the CSR measure being contracted on, 0 otherwise;	Determined based on hand collected information
<i>lnASSETS</i>	The natural logarithm of total assets;	Morningstar DatAnalysis
<i>lnPPE</i>	The natural logarithm of net property plant and equipment;	Morningstar DatAnalysis
<i>ROA</i>	Net income divided by total assets;	Morningstar DatAnalysis
<i>RETURN</i>	The buy-and-hold return of the firm's stock over the past 12 months adjusted for dividends, stock splits and repurchases;	Morningstar DatAnalysis
<i>LEVERAGE</i>	Current liabilities and long-term debt divided by total assets;	Morningstar DatAnalysis
<i>MB</i>	Market value of equity divided by the book value of equity;	Morningstar DatAnalysis
<i>lnCASH</i>	The natural logarithm of total cash;	Morningstar DatAnalysis
<i>sd5ROA</i>	The standard deviation of the firm's monthly stock return over the prior five years;	Morningstar DatAnalysis
<i>SENSITIVE</i>	An indicator variable coded 1 if the firm operates in the materials or energy industry (based on four-digit GICS), 0 otherwise;	Morningstar DatAnalysis
<i>AUDITED</i>	An indicator variable coded 1 if the reported CSR information of the firm has been audited, 0 otherwise;	Hand collected from CSR report
<i>BIG 4</i>	An indicator variable coded 1 if the reported CSR information of the firm has been audited by one of the big 4 audit firms (i.e. EY, Deloitte, PwC, KPMG), 0 otherwise;	Hand collected from CSR report

<i>GRI</i>	An indicator variable coded 1 if the firm follows the GRI framework when reporting on CSR, 0 otherwise;	Hand collected from CSR report
<i>YEARS_CSR</i>	The number of years that have passed since the firm first reported on CSR;	ASSET4
<i>SOCIAL_PERF</i>	Asset4 percentage score, based on the relative social performance of firm <i>i</i> in year <i>t</i> compared to the universe of firms covered by Asset4.	ASSET4
<i>ENVIRO_PERF</i>	Asset4 percentage score, based on the relative environmental performance of firm <i>i</i> in year <i>t</i> , compared to the universe of firms covered by Asset4 in the same industry.	ASSET4
<i>TARGETS</i>	An indicator variable coded 1 if the firm sets targets (not compensation performance measures) for its CSR performance (this includes targets in relation to water efficiency, energy efficiency, emission reduction, diversity and resource efficiency), 0 otherwise;	ASSET4
<i>GOVERNANCE</i>	Asset4 percentage score, based on the relative corporate governance performance of firm <i>i</i> in year <i>t</i> , compared to the universe of firms covered by Asset4;	ASSET4
<i>FEMALE</i>	An indicator variable coded 1 if the CEO is female, 0 otherwise;	Connect4
<i>CEO_AGE</i>	The natural logarithm of age of the CEO in years;	Connect4
<i>CEO_SHARES</i>	The ratio of ordinary shares owned by the CEO relative to shares outstanding;	SIRCA/Hand collected
<i>CEO_TENURE</i>	The number of years the CEO has held the position of CEO;	Connect4
<i>CEO_SALARY</i>	The natural logarithm of fixed salary paid to the CEO.	Connect4

Appendix B: Incidence and magnitude at the restatement level

Category	N	% of line-item restatements	Restatement magnitude (average absolute % change)
IMPROVED	156	56.93	33.90
WORSE	98	35.77	20.09
UNFAVORABLE	157	57.29	34.08
FAVORABLE	94	34.07	18.83
SOCIAL	95	34.67	24.68
ENVIRONMENTAL	179	65.33	22.49
ERROR	43	15.69	28.32
DATA	28	10.21	22.87
MEASUREMENT	190	69.34	28.81
NO REASON GIVEN	13	4.74	31.45
MATCH	92	33.58	35.54
All restatements	274	100.00	28.32

This table presents the incidence and magnitude (average absolute % change) of line-item restatements in our sample.

Appendix C: Association between relative weight placed on CSR in CEO compensation contract and CSR restatements

VARIABLES	(1) <i>RESTATEMENT</i>	(2) <i>%RESTATE_ IMPROVED</i>	(3) <i>%RESTATE_ WORSE</i>	(4) <i>%RESTATE_ SOCIAL</i>	(5) <i>%RESTATE_ ENVIRO</i>
<i>%CONTRACT_CSR</i>	4.521* (1.858)	0.545** (2.581)	0.098 (0.977)	0.464* (1.908)	0.126 (0.799)
<i>AUDITED</i>	2.077*** (4.996)	0.208*** (5.964)	0.046 (1.426)	0.147** (2.867)	0.136*** (3.822)
<i>GRI</i>	0.341 (0.196)	-0.127* (-1.922)	-0.006 (-0.080)	-0.145*** (-3.310)	-0.050 (-0.356)
<i>SENSITIVE</i>	-0.488 (-0.997)	-0.035 (-1.166)	0.008 (0.921)	-0.023 (-0.805)	-0.027 (-0.972)
<i>GOVERNANCE</i>	0.033*** (3.328)	0.001* (2.158)	0.001 (1.367)	0.000 (0.773)	0.001 (1.451)
<i>YEARS_CSR</i>	0.034 (1.202)	0.003 (0.834)	0.004 (1.707)	0.003 (0.716)	0.007** (2.586)
<i>PERF_SOCIAL</i>	-0.007 (-0.464)	-0.001 (-0.616)	0.000 (0.533)	0.001 (0.967)	-0.000 (-0.416)
<i>PERF_ENIRO</i>	0.010 (0.729)	-0.000 (-0.195)	0.000 (0.420)	-0.001 (-1.667)	0.001 (0.926)
<i>TARGETS</i>	-0.614 (-1.515)	-0.044 (-1.550)	-0.040 (-1.627)	-0.047* (-2.023)	-0.030 (-0.649)
<i>lnASSETS</i>	0.017 (0.663)	0.002 (1.459)	-0.001 (-0.928)	0.000 (0.352)	0.002 (1.030)
<i>lnPPE</i>	-0.081* (-1.754)	0.001 (1.184)	-0.001 (-0.802)	-0.001 (-0.652)	-0.001 (-0.585)
<i>Constant</i>	-2.915*** (-4.311)	-0.064* (-1.903)	0.012 (0.499)	-0.016 (-0.467)	-0.025 (-0.421)
Year FE	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES
N	431	431	431	431	431
Psd. R2	0.271				

Adj. R2	0.206	0.099	0.150	0.165
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This table presents results for Model (1) and Model (2) in application of the alternative independent variable *%CONTRACT_CSR* which is measured as the relative weight placed on CSR related performance measures in the CEO's STI contract. The sample size is reduced for this variable as some firms that contract on CSR do not give a specific weighting, therefore we exclude these observations. However, firms that do not contract on CSR have a weighting of zero and are included. All other variables are defined in Appendix A. Standard errors are clustered by firm. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively.

Appendix D: Association between CSR contracting and the cause of restatements

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		%RESTATE_ERROR				%RESTATE_MEASURE		
<i>CONTRACT_CSR</i>	-0.009 (-0.992)				0.039** (2.139)			
<i>CONTRACT_SOCIAL</i>		-0.007 (-0.822)		-0.002 (-0.244)		0.042** (2.369)		0.039* (1.678)
<i>CONTRACT_ENVIRO</i>			-0.019 (-1.636)	-0.018 (-1.692)			0.037 (1.799)	0.007 (0.242)
<i>AUDITED</i>	0.028** (2.977)	0.028** (2.953)	0.028** (2.945)	0.028** (2.970)	0.196** (2.435)	0.197*** (5.308)	0.178*** (6.132)	0.196*** (6.260)
<i>GRI</i>	0.010 (0.279)	0.010 (0.272)	0.011 (0.309)	0.011 (0.305)	0.075 (0.733)	0.076 (1.391)	0.009 (0.174)	0.008 (0.174)
<i>SENSITIVE</i>	0.021* (1.982)	0.020* (1.965)	0.021** (2.403)	0.021* (2.164)	0.033 (1.079)	0.032** (2.403)	0.002 (0.118)	-0.013 (-0.552)
<i>GOVERNANCE</i>	0.000 (0.131)	0.000 (0.124)	0.000 (0.477)	0.000 (0.449)	0.000 (0.375)	0.000 (0.799)	0.000 (0.133)	0.001 (1.006)
<i>YEARS_CSR</i>	0.001 (0.530)	0.001 (0.500)	0.001 (0.602)	0.001 (0.608)	0.001 (0.106)	0.001 (0.281)	-0.002 (-0.787)	0.001 (0.416)
<i>PERF_SOCIAL</i>	-0.000 (-0.261)	-0.000 (-0.258)	-0.000 (-0.387)	-0.000 (-0.387)	0.000 (0.204)	0.000 (0.227)	0.000 (0.146)	0.000 (0.121)
<i>PERF_ENVIRO</i>	-0.000 (-0.043)	-0.000 (-0.043)	-0.000 (-0.014)	-0.000 (-0.010)	0.002 (1.442)	0.002* (2.092)	0.003*** (3.334)	0.002** (2.181)
<i>TARGETS</i>	0.010 (0.959)	0.010 (0.965)	0.011 (0.930)	0.011 (0.949)	-0.043* (-1.769)	-0.044 (-1.239)	-0.026 (-0.985)	-0.048* (-1.699)
<i>lnASSETS</i>	-0.000 (-0.515)	-0.000 (-0.512)	-0.000 (-0.540)	-0.000 (-0.538)	-0.000 (-0.105)	-0.000 (-0.120)	0.003 (0.306)	0.000 (0.084)
<i>lnPPE</i>	0.000 (0.212)	0.000 (0.249)	0.000 (0.350)	0.000 (0.301)	-0.001 (-0.735)	-0.001 (-0.521)	-0.003 (-1.459)	-0.002 (-0.970)
<i>Constant</i>	-0.003 (-0.192)	-0.003 (-0.189)	-0.008 (-0.444)	-0.007 (-0.426)	-0.052 (-1.547)	-0.053 (-1.705)	-0.046 (-0.184)	-0.008 (-0.209)
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES

N	674	674	674	674	674	674	674	674
Adj. R2	0.056	0.059	0.059	0.059	0.160	0.161	0.151	0.164

This table presents results for Model (1) in application of two alternative dependent variables. The dependent variable in columns (1) to (4) is *%RESTATE_ERROR*, measures as the number of restatements relating to t-1 that were restated in the current year that occurred due to errors made when reporting in t-1, divided by the total number of restatements in year t. The dependent variable in columns (5) to (8) is *%RESTATE_MEASURE*, measured as the number of restatements relating to t-1 that were restated in the current year that occurred due to measurement changes in year t, divided by the total number of restatements in year t. All other variables are defined in Appendix A. Standard errors are clustered by firm. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively.