The Contagion Effect of CSR Restatements: The Role of Restatement Proximity to Financial Information

ABSTRACT

Descriptive evidence shows that global firms increasingly *restate* their corporate social responsibility (CSR) performance measures. Concurrently, a substantial number of firms integrate their CSR performance measures in financial reports. In this study, we examine investor reaction to CSR restatements. We find investors are less willing to invest in the firm when there is a CSR restatement compared to when CSR measures are not restated. Drawing on 'contagion theory', we predict and find that integrating CSR restatements in financial reports affects investors' perceptions of financial information, and subsequently their investment judgements. We also predict and find that disclosing CSR and financial measures in separate reports alleviates the contagion effect of CSR restatements. Our study should be informative to global regulators and standard-setting bodies, given their ongoing considerations of CSR reporting requirements.

Keywords: CSR Restatements; Report Format; Contagion Theory; Investors

1. Introduction

Prior accounting research has long considered consequences of financial restatements, and the evidence shows that financial restatements adversely affect firm value (Anderson & Yohn, 2002; Dechow et al., 1996; Hennes et al., 2008; Hribar & Jenkins, 2004). Restatements generate negative economic consequences by damaging investor trust because "[a] restatement is inconsistent with investors' positive expectations regarding an investee firm and its management, thereby damaging investor trust" (Elliott et al., 2012, p. 514). However, prior literature has largely focused on *financial* restatements. Despite their prevalence, the effects of corporate social responsibility (CSR) restatements remain an open empirical question (Ballou et al., 2018; Pinnuck et al., 2020). Specifically, it is not obvious *ex ante* whether CSR restatements carry a negative connotation similar to that of financial restatements, in part because CSR reporting is inherently less certain and still developing relative to financial reporting. In this study, we examine whether and how CSR restatements affect investors' judgements. We also examine the implications of integrating CSR restatements in financial reports versus disclosing them in separate reports.

Our study is motivated by the growing prevalence of CSR restatements as well as regulatory interest in the reporting format of CSR disclosures. Survey evidence indicates that CSR measures are increasingly restated due to detected errors or methodological updates (KPMG, 2011, 2013; Pinnuck et al., 2020). For example, KPMG (2013) reports that 26% of the world's largest companies disclosed CSR restatements, and Pinnuck et al. (2020) find a significant increase in CSR restatements over time - from 29% in 2006 to 53% in 2013. Interestingly, KPMG (2011) reports that the frequency of CSR restatements is substantially greater than that of financial restatements.[1] While these restatements can arguably be part of

[1] An important feature of CSR restatements is that unlike financial restatements, CSR restatements are not formally announced. Instead, CSR restatements are reported as a prior period adjustment in annual financial reports or separate CSR reports. Anderson and Yohn (2002) show that financial restatements in 10-Ks also adversely affect firm value, thus suggesting that CSR restatements may still affect investors' judgements.

the maturation process of CSR reporting (Ballou et al., 2018), it is also consistent with "greenwashing" concerns, which suggest that firms use CSR performance disclosures to strategically influence investors and other stakeholders (KPMG, 2013; Pinnuck et al., 2020). At the same time, global firms use alternative CSR reporting frameworks to communicate their CSR performance. For example, firms either integrate CSR measures – including CSR restatements –in their financial reports *or* disclose in separate standalone CSR reports[2] (Cohen et al., 2012; KPMG, 2017).

Understanding how CSR restatements affect investors' judgements is important to inform current reporting practice as well as the design of new reporting regulations. Regulators inquire about the implications of different CSR reporting formats. For example, the SEC sought public feedback for the question of "How important to investors is integrated reporting, as opposed to separate financial and sustainability reporting?" (SEC, 2016, p. p. 214). We provide *ex ante* evidence for the SEC as well as global regulators as they consider alternative CSR reporting frameworks. Specifically, managers may integrate CSR measures into financial reports to increase the visibility of their firms' CSR activities to a wider audience. However, in the case that these CSR measures are subsequently restated, it is possible that such restatements may affect investors' reactions to a firm's other information (e.g., financial information) in the same report.

To develop our predictions, we draw upon the category construction literature with insights from contagion theory. The category construction literature suggests that people typically adopt a *unidimensional* perspective, unless inconsistencies prompt a shift to a *multidimensional* perspective (Ahn & Medin, 1992; Spalding & Murphy, 1996). This literature suggests that, when CSR measures are integrated with financial reports, investors will maintain

[2] For example, KPMG (2017) reports that 60% of 4,900 leading companies in 49 countries, and 78% of the largest 250 global companies integrate CSR performance measures in their financial reports.

a financial perspective, assigning less weight to CSR information. However, when CSR measures are presented separately, this prompts investors to adopt a multidimensional perspective, increasing the influence of CSR measures on their judgments. Consistent with this conjecture, Bucaro et al. (2020) find that presenting financial and CSR measures in two separate reports led investors to adopt a multidimensional perspective that included a financial dimension, and also a social responsibility dimension, whereas integrated reporting caused investors to adopt a unidimensional perspective where financial perspective is most prominent.

Building on this framework and the contagion theory (Brodie, 2009; Lynch, 2008), we posit that when CSR restatements occur, the negative implications of restatements will spill over onto the financial dimension in integrated reports, amplifying investor concerns about the firm's overall information reliability. This contagion effect thus leads to a stronger negative impact on investor reaction. Conversely, in separate reports, we predict that the negative impact of CSR restatements will be confined to the CSR dimension, preserving confidence in the financial information and attenuating any overall negative effect. Therefore, CSR restatements will have a greater negative effect on investors' judgements when integrated with financial information compared to when presented separately.

To test our predictions, we employ a 2 × 2 between-subjects experimental design with nonprofessional investors as our subjects[3]. We manipulate *CSR restatement* (present versus absent) and *report format* (CSR restatement integrated in a financial report *or* disclosed in a separate report). Our investor-participants read excerpts of a company's annual performance report and make investment decisions. In our CSR restatement manipulation, participants learn that the firm's most recent carbon emission performance metric was overstated; and is adjusted in the current year to accurately reflect the firm's carbon footprint. In the absent condition, no

[3] Experimental approach is appropriate for our setting because sufficient archival data of CSR restatements is not readily available and/or entails confounds across different jurisdictions (Ballou et al., 2018). Further, experimental approach allows us to more directly examine and isolate how CSR restatements affect investors' judgements while holding everything else constant.

restatement is disclosed. In our setting, we focus on a prior-period CSR restatement that is due to a detected error rather than fraud or a methodological update[4].

Consistent with our predictions, we find that investors are less willing to invest in the firm when there is a CSR restatement compared to when there is no restatement. We also find that the effect of CSR restatement on investors' judgement is larger when the restatement is integrated in the financial report compared to when it is disclosed in a separate CSR report. Furthermore, as consistent with the contagion logic, our mediation analysis demonstrates that the mechanism through which CSR restatements decrease investors' willingness to invest is decreased confidence in the firm's financial information.

We contribute to the literature as follows. First, we add to the vast and growing CSR disclosure literature that shows CSR disclosures as having important capital-market and economic benefits (J. C. Anderson & Frankle, 1980; Dhaliwal et al., 2011; Dhaliwal et al., 2012; Plumlee et al., 2015). We extend this literature by considering whether specific quality indicators of CSR disclosures (i.e., restatements) attenuate the benefits of CSR reporting. Our study also adds to recent experimental research that considers the effects of integrating CSR information in financial reports. Reimsbach et al. (2018) find that integrating CSR information in financial reports increases access and evaluation of CSR information, whereas Bucaro et al. (2020) document that CSR measures have greater effect on investor' judgements when reported in a separate report.

Second, we contribute to the financial restatement literature by considering whether and how CSR restatements differentially affect investors (Amel-Zadeh & Zhang, 2014; K. L. Anderson & Yohn, 2002; Dechow et al., 1996; Elliott et al., 2012; Hribar & Jenkins, 2004;

[4] KPMG (2013) reports that 21% (33%) of CSR restatements are due to errors (methodological updates). However, Pinnuck et al. (2020) find that CSR restatements are approximately evenly split between restatements due to errors and changes in metric methodology. We focus on restatements due to errors rather than methodological updates because errors are more likely to be consistent with managerial incentives and/or reflect weak internal controls, thereby likely causing investors to question management's credibility.

Palmrose et al., 2004). Specifically, we extend this literature by exploring whether CSR restatements affect investors' reactions to the firm's other disclosures, specifically the financial counterparts. Moreover, our study is different from a concurrent paper by Backof et al. (2019) which provides experimental evidence of the effects of CSR restatements on investors' judgements. They focus however on (1) materiality and (2) intentionality of CSR restatements, and find that CSR restatements affect investors' judgement when such restatements are material and intentional. In our study, we focus on reporting framework of CSR restatements, a topic of particular interest to regulators (SEC 2016).

Third, we contribute to the contagion literature that provides evidence of contagion effects stemming from adverse events within *related entities* (Chiu et al., 2013; Francis & Michas, 2013; Gleason et al., 2008; Guo et al., 2018; Kedia et al., 2015). We extend this line of literature by considering the contagion effects of different *types* of information (financial versus CSR information). Specifically, we find that investor reactions to CSR restatements extend to non-restated financial information, and this is moderated by the reporting format.

2. Background related literature and theory

2.1. The CSR reporting landscape

CSR reporting is increasingly becoming mainstream among global firms, with over 95% of the world's largest companies providing some form of CSR disclosures (KPMG, 2022). This trend is driven by an increasing wave of CSR reporting regulations worldwide (Christensen et al., 2021; Haji et al., 2023), as well as a growing demand from stakeholders for CSR disclosures. As a wider range of stakeholders, including investors, put greater emphasis on CSR performance measures relative to other performance indicators (Garavaglia et al., 2023), firms are pushed to disclose their CSR activities and impacts.

Despite its growing prevalence, the CSR reporting landscape differs significantly from that of financial reporting for several reasons. First, unlike the mandatory audits for financial statements, assurance on CSR disclosures remains largely voluntary and thus CSR assurance is not widespread among listed firms (CAQ, 2023). The lack of widespread CSR assurance can lead to variations in the reliability and credibility of CSR reports. Second, CSR reporting standards and frameworks are relatively less developed and harmonized compared to financial reporting standards. While financial reporting follows well-established guidelines like GAAP or IFRS, CSR reporting is guided by a variety of voluntary frameworks such as GRI, SASB, and TCFD, each with its own set of criteria and focus areas. This fragmentation in standards can result in inconsistencies and difficulties in comparing CSR performance across firms.

Given this backdrop, CSR restatements are becoming more prevalent while at the same time are more difficult to identify compared to financial restatements (KPMG, 2011, 2013; Michelon et al., 2019; Pinnuck et al., 2020). This raises significant concerns regarding the reliability of CSR disclosures (Pinnuck et al., 2020), particularly in light of ongoing concerns over greenwashing, and growing managerial incentives to provide misleading information about their CSR performance measures (Bachmann & Spiropoulos, 2023).

Given the evolving landscape of CSR reporting and the current discussions around integrating CSR considerations into financial reports, we study the impact of CSR restatements on investor judgments. Specifically, we examine whether and how integrating CSR restatements in financial reports affects investors' perceptions of financial information reliability and their subsequent investment decisions. Backof et al. (2019) find that CSR restatements, which initially induce concerns about the reliability of a firm's CSR information, extend further to generate suspicions about the reliability of the firm's underlying financial information. In this study, we explore boundary conditions of the contagion effects of CSR restatements by considering the presentation format of CSR restatements. Our central thesis is that the effect of CSR restatements on investors' judgements is greater when these restatements are combined with financial information compared to when presented in separate standalone CSR reports.

2.2. Hypothesis: The contagion effect of CSR restatements

Integrating CSR measures with financial information in a single report, as opposed to presenting them in two separate reports, places these pieces of information in closer proximity. While this integration may make CSR performance seem more relevant (Eccles & Krzus, 2010), and facilitate investors' simultaneous access and assessment of both CSR and financial measures (Reimsbach et al., 2018), research in psychology and marketing suggests "categorical cues" prompt individuals to adopt either a unidimensional or multidimensional perspective when processing information (Spalding & Murphy, 1996). That is, people tend to default processing information using a unidimensional perspective unless inconsistencies prompt a shift to a multidimensional perspective. When information appears within a single accessible dimension, decision-makers tend to use a unidimensional perspective. Conversely, when pieces of information are not aligned within a single dimension, it prompts a multidimensional perspective, leading decision-makers to organize and interpret the information in varied ways.

Consistent with this line of thinking, Bucaro et al. (2020) contend that the extent to which investors adopt different perspectives, unidimensional or multidimensional, when evaluating different performance measures, depends on whether a social responsibility dimension which is distinct from a financial dimension, can be sufficiently activated. They show the presentation of CSR measures in a separate report as compared to integrating in the financial report serves such a cue for a multidimensional perspective to be taken.

In this study, we expect that when CSR measures are integrated in the financial report, they do not create a distinct social responsibility dimension but rather blend into the dominant financial dimension (Bucaro et al., 2020). Consequently, investors adopt a unidimensional perspective when making their investment decisions. While Bucaro et al.'s study suggests that under this unidimensional perspective, CSR *performance* has a lesser effect on investors' judgments, our study differs by examining the effect of CSR *restatement*. We posit, using the contagion logic, that when CSR measures are integrated in the financial report, this unidimensional perspective leads investors to be more *negatively* affected, resulting in a lower willingness to invest.

Our prediction is based on the idea that a restatement is inconsistent with investors' positive expectations about the firm and its management, thus undermining trust in the management's credibility to prepare accurate reports (Elliott et al., 2012). While Bucaro et al. (2020) focus on CSR *performance* as distinct from traditional financial performance (Elliott et al., 2014), our study suggests that CSR *restatement* operates differently. Specifically, we predict that upon recognizing the CSR restatement, investors attribute to the source of the restatement, that being the credibility of managers and the reliability of the information (Elliott et al., 2012; Gleason et al., 2008). As such, under a unidimensional perspective where restated CSR measures are integrated with financial information, the doubt cast on the reliability of CSR measures and management extends to financial reporting. This contagion effect leads investors to being less confident and question the reliability of the financial information as well as negatively affecting the extent they perceive the financial information as important when making investment judgements. This decreases their willingness to invest. Furthermore, under a unidimensional perspective where the financial dimension is predominantly activated, we predict that with the heightened concerns over the reliability of financial information and the lesser importance placed on the use of financial information, the negative effect on willingness to invest is even more pronounced.

On the other hand, when CSR measures are presented in a separate report to the financial information, we predict that investors will adopt a multidimensional perspective

(Bucaro et al., 2020), thereby mitigating the contagion effects of CSR restatement. Specifically, the spatial separation of CSR measures from financial information serves as a cue that these dimensions are inherently different, allowing investors to form distinct cognitive representations that include *both* a social responsibility and financial dimension. This separation in turn facilitates a multidimensional perspective that prevents the contagion effect of CSR restatements.

When faced with a CSR restatement, investors may still question the credibility of management and the reliability of reported information. However, with a multidimensional approach, these concerns are confined to the social responsibility dimension and do not extend to the financial dimension. Accordingly, they are as likely to perceive the separated financial information as reliable and important to making a sound investment decision. This distinction enables investors to justify that the managers responsible for CSR disclosures are different from those who prepare the financial information, thereby maintaining confidence in the latter.[5] As investors primarily rely on financial performance when making investment decisions, which remains unaffected by the negative CSR restatement, we predict that the impact of CSR restatement is attenuated in separate reports. Together, we hypothesize the following:

H1: CSR restatements will negatively affect investors' willingness to invest, and this effect is greater when CSR restatements are integrated in the financial report compared to when reported in a separate CSR report.

[5] This is consistent with motivated reasoning theory (Kunda, 1990), that investors can process information in such a way to support their preferences (e.g., downplaying the effect of certain information) however this is constrained to the extent that it is reasonable to do so (e.g., subject to reasonableness constraints). Hence, having *both* a financial and social responsibility dimension accords them this justification opportunity to separate the assessment of the two, and that the reliability of the CSR information as separate to the quality of reporting pertaining to the financial information. This in turn reduces any contagion effects from the CSR restatement.

3. Research Method – Experiment 1

3.1. Experimental design and participants

To test our hypothesis, we conduct a 2×2 between-subjects experiment with investors, manipulating CSR restatements (present versus absent) and report format of the CSR restatements (CSR performance and thus the CSR restatement is integrated in a financial report versus presented in a standalone CSR report). In manipulating CSR restatements, we focus on restatements due to detected errors rather than methodological updates or fraud. This experimental design allows us to both determine the incremental effects of CSR restatements on investors' judgements, while also examining the effects of integrating CSR restatements in financial reports.

Participants in the experiment are 163 MBA students enrolled in a major university in India. On average, participants have taken 3.2 accounting courses and 5.7 finance courses. Over 85% of the participants have analyzed a company's financial statements to evaluate firm performance at least once in the past, and 53.4% reported familiarity with CSR reports. About 64% of the participants reported that they have traded stocks in the past, and 94.5% plan to do so in the future. The demographic profile of the participants in our experiment is comparable with those reported in prior studies (Elliott et al., 2007; Guiral et al., 2020). Hence, the participants are suitable proxies for nonprofessional investors.[6] Each participant received a $10 Amazon voucher for their participation.

3.2. Case and procedures

All participants begin the experiment by reading through background information and financial performance of Luca Stores, a publicly traded hypothetical firm in the retail industry.

[6] We find no significant differences in the demographic profile of the participants, or the time taken to complete the task across the experimental conditions.

Participants assume the role of a prospective investor and evaluate potential investment in Luca Stores. To isolate the incremental effects of CSR restatements and reduce investors' anchoring on financial performance, all participants learned that the financial performance of Luca Stores has been favorable over the last three years.

Parts of the experimental instrument are based on the instrument in Bucaro et al. (2020) with significant amendments. Our setting focuses on CSR restatements. Specifically, investors read case materials reflecting the presence or absence of restatements of CSR measures that are either integrated in a financial report; or presented in a separate report.

Finally, all participants make their investment judgement and completed questions regarding the explanatory measures for their judgments. This is followed by debriefing questions that covered participants' CSR attitude and demographic profile.

3.3. Independent variables

We manipulate two independent variables in a between-participants experiment. We first manipulate CSR restatements at two levels (present versus absent). Our first manipulation is motivated by survey evidence indicating that CSR restatements are increasingly common in corporate reports; yet the effects of such restatements on investors are unknown (KPMG, 2011, 2013; Pinnuck et al., 2020). In the restatement conditions, we *restate* one of the three CSR measures namely, carbon footprint. Specifically, participants learned that management has identified and corrected errors in the previously reported carbon footprint figures for the years 2020 and 2021. Specifically, the participants learned that the previously reported carbon figures for 2020 and 2021 were both understated by 11.6% and 13%, respectively. We deliberately matched the magnitude of the restatements to 11-13% to align with the range commonly in practice for CSR restatements (Pinnuck et al., 2020). To increase the salience of our CSR restatement manipulation, we asked participants in the restatement conditions to provide written responses briefly summarizing their thoughts about why a company would restate its environmental and social performance indicators.[7] Across the restatement conditions, participants are explicitly told that the restatement is due to an **error** detected in the calculation of the CSR measure. In the restatement absent conditions, no restatement is disclosed.

Second, we manipulate the report format of CSR restatements at two levels (CSR restatement integrated in a financial report versus presented in a separate report). We adapted in part the design of Bucaro et al. (2020). In the *integrated report* condition, participants first viewed the performance highlights section of the annual report, where they are presented with the performance of three CSR measures together with four financial measures. Participants then view the financial statement and a section showing the CSR performance of the annual report. In the *separate reports* condition, participants observe the same financial and CSR performance information but within sections of two different reports: the annual report and CSR report. We ensure the information are consistent across conditions. Specifically, we separate the financial and CSR performance highlights across the annual report and CSR report, respectively, the financial statement is in the annual report and the section on CSR performance in the CSR report. To make salient our manipulation and mimic closely to real-life practices, similar to Bucaro et al (2020), for the *separate reports* conditions, participants had the choice between accessing the annual report or the CSR report first by clicking a link. To ensure that all participants viewed both report, participants are automatically moved to the unchosen report after they finished reading their chosen report. After they had viewed both reports at least once, they have the choice to review the other reports by clicking on the link.

[7] The written responses provided by the participants in the restatement conditions offer reasons why a firm would restate its CSR measures, indicating that our CSR restatement manipulation worked as intended. Participants in the no restatement conditions were not required to provide an explanation for CSR restatements.

3.4. Dependent and process variables

Our primary dependent variable is participants' willingness to invest in Luca Stores. Participants responded to two questions: "How attractive is Luca Stores as a potential investment?" and "What is the likelihood you would consider Luca Stores as a potential investment?", measured on an 11-point scale with endpoints 0 = "not at all attractive/ likely" and 10 = "very attractive/ likely." Following prior studies (Hoang & Phang, 2023; Kelly & Tan, 2017), we use the average of participants' responses to these two questions to form our willingness to invest measure in our main analyses. We find similar results when analyzing each question individually.

We then ask participants to respond to questions that measure our process variables. First, we collect separate measures for participants' feelings of *financial* information reliability and the importance they placed on the *financial* information in making a sound investment decision. Participants responded to the statement "I felt like I could rely on the financial information in Luca Stores' report", measured on an 11-point scale anchored from 0 = "strongly disagree" to 10 = "strongly agree." Participants also indicate the extent they feel the financial information is important to making sound investment decisions with the end point 0 = "Not at all important" to 10 = "Very Important". We use the average of participants' responses to these two questions to form our *confidence* measure in the financial information. We use this measure as the mediator for our process analyses.

4. Results

4.1. Manipulation checks

We asked the participants two questions to ensure that our manipulations were successful. We first asked participants to recall the report format of the CSR information. Eighty-four percent of participants correctly recall that the CSR information was integrated in the financial report or presented in a separate report, indicating a successful report format manipulation. We then asked participants to recall whether the CSR information included restatements or no restatement. Seventy-two percent of participants correctly identify the presence or absence of CSR restatements. Further analyses indicate that 95% of participants assigned to the restatement conditions correctly recall the presence of CSR restatements, indicating a successful CSR restatement manipulation. Finally, we asked participants in the CSR restatement condition to recall whether the stated reason for the CSR restatement was due to error or fraud, and 91% of the participants correctly identify that the stated reason as error. We include all responses in our analyses. Excluding responses from participants who fail the manipulation checks does not alter our inferences.

4.2. Test of hypothesis

Drawing on prior research in accounting and the contagion theory, we hypothesize that CSR restatements evoke more negative investor reactions when the restatement is integrated in a financial report compared to when it is provided in a separate CSR report. We tested our hypothesis using participants' investment judgements as the dependent variable. Panel A of Table 1 presents descriptive statistics for participants' investment judgements, Panel B reports the results of Analysis of Variance (ANOVA), and Panel C summarizes the follow-up simple effect test results.

[Insert Table 1 about here]

The ANOVA results show a significant main effect of *CSR restatement* ($F_{1,\,159} = 3.285$, $p = 0.072$, two-tailed; Panel B of Table 1) where investors are less willing to invest when CSR measures are restated than when they are not restated (mean $6.55 < 6.91$; Table 1, Panel A). The ANOVA results also show a significant interaction effect ($F_{1,\,159} = 4.704$, $p = 0.032$, two-tailed). Follow-up simple effect tests presented in Panel C of Table 1 show that when CSR information is integrated, investors are less willing to invest when there is restatement than no restatement (mean 6.25 < 7.08, t_{77} = 2.773 p = 0.006; two-tailed). However, when the CSR information is presented separately, there is no significant difference in investors' willingness to invest with CSR restatement (mean 6.84 versus 6.77, t_{82} = 0.256, p = 0.798; two-tailed). Taken together, our results offer support for the contagion effect of integrating CSR restatements in financial reports; in that when CSR measures are integrated in financial reports, CSR restatements lead to a negative effect. However, this effect is attenuated when CSR measures are presented in a separate report to the financial information.

4.3. Mediation analyses

We next examine the possible mechanism through which integrating CSR restatements in financial reports evokes greater negative investor reaction. Our theory suggests that the negative impact of integrating CSR restatements in financial reports arises because investors perceive the reliability of financial information to be lower, which in turn negatively affects their investment judgments. Based on this conjecture, we anticipate investor confidence in the financial information to be lower when CSR restatements are integrated in the financial report compared to when they are presented in a separate report. This decrease in investor confidence in financial information, in turn, reduces investors' willingness to invest. That is, we expect an *interaction* between CSR restatements and report format, such that investor confidence in the financial information is *lowest* when CSR restatements are integrated in the financial report. To test our prediction, we collected measures for investor confidence in the financial information across our experimental conditions.

Descriptive results in Panel A of Table 2 show that the means for investor confidence in financial information are lower in the CSR restatement conditions relative to the non-restatement conditions (mean 7.45 < 7.91).

The ANOVA results in Panel B of Table 2 show a pattern that supports our predicted interaction. We find significant main effects of *CSR restatement* ($F_{1, 159} = 5.761$, $p = 0.018$, two-tailed) and a significant interaction effect of *CSR restatement* × *report format* ($F_{1, 159} = 4.180$, $p = 0.043$, two-tailed).

Follow-up simple effect tests presented in Panel C of Table 2 lend further support to the interaction effects in Panel B of Table 2. Specifically, in the integrated reporting format, the effect of CSR restatements is significant; investors are *less* confident with the financial information when the CSR is restated (mean 7.15 < 8.03, $t_{77} = 3.088$, $p = 0.006$, two-tailed). In contrast, when CSR is presented in a separate report, the effect of CSR restatement is not significant; investors are similarly confident with the financial information regardless of whether CSR is restated (mean 7.74 > 7.81, $t_{82} = 0.255$, $p = 0.799$, two-tailed). Taken together, the results offer support for the contagion effect of integrating CSR restatements in financial reports in its effect on investors' confidence of financial information, but not yielding similar contagion effects when they are presented separately.

[Insert Table 2 about here]

Based on these results, we performed mediation analyses using Hayes Process macro (PROCESS Model 8) to examine whether the decrease in investor confidence in financial information explains the greater effect of integrating CSR restatements in financial reports on investors' judgements (Hayes, 2017; Preacher & Hayes, 2008). Our theory suggests that when CSR restatements are integrated in the financial reports, due to contagion effects, investors will be less confident in the financial information as they perceive the financial information as less reliable and less important in their decisions, which in turn leads to a lower willingness to invest. In our theory, we further posit that when the CSR restatement is presented in a separate report to the financial report, this negative effect is attenuated.

We run the moderated mediation model (Model 8, number of bootstraps = 5000, 95% confidence interval) using investment as the dependent variable, CSR restatement as the independent variable, report type as the moderator, and investors' confidence in the financial information (a composite measure of perceived reliability and importance of the financial information) as the mediator. The index of moderated mediation was negative and significant (index = -0.460, 95% CI [-0.970, -0.031]), indicating that the indirect effect of CSR restatement (X) on investment decisions (Y) via investor confidence (M) is stronger when the report format is integrated (W=1) compared to separate reports (W=2).

As shown in Panel A of Table 3, the direct effect of CSR restatement (X) on the mediator, investor confidence (M), was positive and statistically significant ($b = 1.681$, $p = 0.008$). This indicates that the presence of a CSR restatement decreases investors' confidence. The mediator, investor confidence (M), in turn has a positive and significant direct effect on the dependent variable, investment decisions (Y) ($b = 0.571$, $p < 0.001$).

Turning to the conditional indirect effect, the bootstrap confidence interval for the indirect effect of CSR restatement (X) on investment decisions (Y) through investor confidence (M) excluded zero when the report format was integrated (W=1) (indirect effect = 0.500, 95% CI [0.140, 0.938]). However, when the CSR information was presented in a separate report (W=2), the indirect effect was not significant (indirect effect = 0.040, 95% CI [-0.225, 0.320]).

That is, investor confidence of the financial information only significantly mediates the relation between CSR restatement and investors' willingness to invest when CSR restatement is integrated within the financial report. The coefficient of the indirect path being positive indicates that restatement (non-restatement) is associated with investors having lower (higher) confidence in the financial information, which in term is associated with a lower (higher) willingness to invest. Our results further show that when the CSR restatement is in a separate report, the indirect path is insignificant. The findings are consistent with our prediction that subject to a contagion effect when the CSR is integrated with the financial report, investors' confidence in financial information mediates CSR restatement and their willingness to invest.

5. Conclusion

Despite the increasing prevalence of CSR restatements in corporate reporting and concerns over greenwashing, little is known about how investors react to CSR restatements. In this study, we provide theoretical and experimental evidence showing contagion effect of integrating CSR restatements in financial reports compared to presenting CSR restatements in standalone CSR reports, even though non-restated CSR measures yield no significant difference in investors' judgements regardless of reporting format. Consistent with our contagion theory, we also provide evidence indicating that the mechanism through which integrating CSR restatements in financial reports reduces investors' willingness to invest is decreased investor confidence in financial information.

Our findings have a number of policy and practical implications. We inform corporate reporting practice where there is a significant variation in CSR reporting. For example, a KPMG (2017) survey reports that 78% of the world's largest 250 companies integrate CSR measures in their financial reports. Given the prevalence of CSR restatements (KPMG, 2011, 2013; Pinnuck et al., 2020), our results should be of interest to firm managers as we shed light on the implications of CSR restatements, especially when such restatements are reported along with financial information. Our results also inform regulators considering CSR reporting frameworks. Specifically, we respond to the SEC's inquiry of "How important to investors is integrated reporting, as opposed to separate financial and sustainability reporting?" (SEC, 2016, p. 214).

We note several caveats, all of which offer opportunities for future research. First, we focused on an *error* CSR restatement rather than restatements due to methodological updates or fraud. As a result, future research can examine whether investors react differently when there are other forms of CSR restatements. Second, this study considered a setting where CSR performance measures were not assured. Future research could manipulate the presence versus absence of an assurance/ audit on CSR measures, and shed light on whether CSR assurance serves as a potential intervention to attenuate the contagion effect of CSR restatements. Finally, we do not manipulate the materiality of CSR restatements. While our theory suggests that the results should extend to material versus immaterial CSR restatements, it is possible that the effects are likely to be stronger in settings where CSR issues are material.

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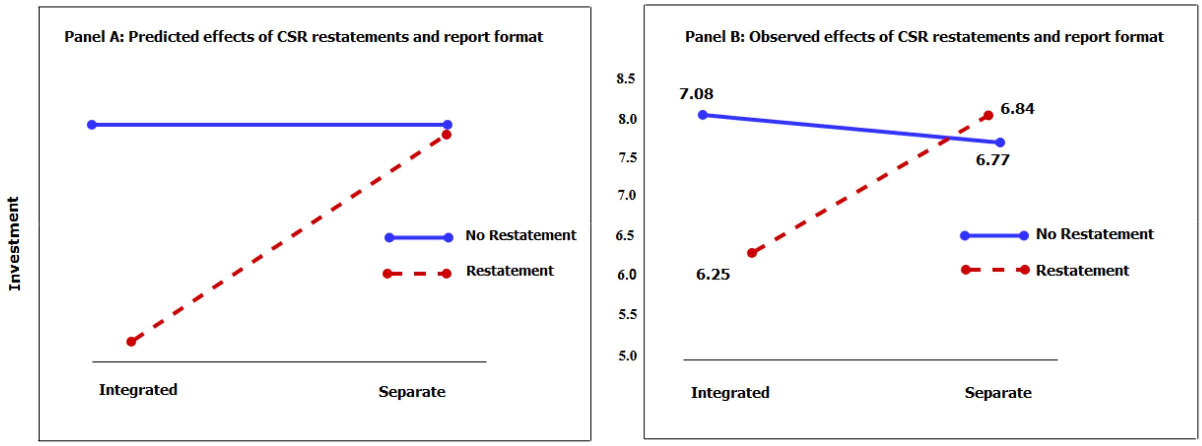
TABLES AND FIGURES

Figure 1: Predicted and observed results for the hypothesis



Note: Panel A of Figure 1 summarizes predicted effects of CSR restatement and report format on investors' investment judgments. Panel B of Figure 1 plots observed means for investors' investment judgments. We manipulate (1) CSR restatement (present versus absent) and (2) report format (integrated versus separate report). The dependent variable, *Investment*, is the average of participants' responses two questions: "How attractive is Luca Stores as a potential investment?" and "What is the likelihood you would consider Luca Stores as a potential investment?", measured on an 11-point scale anchored from 0 = "not at all attractive/ likely" to 10 = "very attractive/ likely."

TABLE 1

Hypotheses testing: Descriptive statistics and ANOVA for Investment

Panel A: Mean [Standard Deviation] for Investment

CSR Restatement	**Report Format**		
	Integrated	Separate	Total
Present	6.25 [1.67] n = 40	6.84 [1.42] n = 41	6.55 [1.57] n = 81
Absent	7.08 [1.07] n = 39	6.77 [1.05] n = 43	6.91 [1.07] n = 82
Total	6.66 [1.46] n = 79	6.80 [1.23] n = 84	6.73 [1.35] n = 163

Panel B: ANOVA

Source	**SS**	**df**	**Mean Square**	F	p-value
CSR Restatement	5.767	1	5.767	3.285	**0.072**
Report Format	0.809	1	0.809	0.461	0.498
CSR Restatement × Report Format	8.258	1	8.258	4.704	**0.032**
Error	279.163	159	1.756		

Panel C: Simple effects for *CSR Restatement* × *Report Format*

	***t*-statistic**	p-value
Effect of CSR restatement when report is integrated format	2.773	**0.006**
Effect of CSR restatement when report is separate format	0.256	**0.798**
Effect of report format given CSR restatement	2.009	0.046
Effect of report format given no CSR restatement	1.056	0.292

Note: Panel A and B of Table 1 summarize the descriptive statistics and two-way ANOVA results for participants' investment judgements. Panel C presents the follow-up simple effect test results. We manipulate (1) CSR restatement (present versus absent) and (2) report format (integrated versus separate report). The dependent variable, *Investment*, is the average of participants' responses two questions: "How attractive is Luca Stores as a potential investment?" and "What is the likelihood you would consider Luca Stores as a potential investment?", measured on an 11-point scale anchored from 0 = "not at all attractive/ likely" to 10 = "very attractive/ likely." All *p*-values are two-tailed.

TABLE 2

Mediation Analysis - Descriptive Statistics and ANOVA for Investor Confidence

Panel A: Mean [Standard Deviation] for Confidence

CSR Restatement	**Report Format**		
	Integrated	Separate	Total
Present	7.15 [1.67] n = 40	7.74 [1.23] n = 41	7.45 [1.49] n = 81
Absent	8.03 [1.03] n = 39	7.81 [0.99] n = 43	7.91 [1.01] n = 82
Total	7.58 [1.45] n = 79	7.78 [1.11] n = 84	7.68 [1.29] n = 163

Panel B: ANOVA

Source	**SS**	**df**	**Mean Square**	F	p-**value**
CSR Restatement	9.099	1	9.099	5.761	**0.018**
Report Format	1.486	1	1.486	0.941	0.333
CSR Restatement × Report Format	6.603	1	6.603	4.180	**0.043**
Error	251.147	159	1.580		

Panel C: Simple effects for *CSR Restatement* × *Report Format*

	***t*-statistic**	p-**value**
Effect of CSR restatement when report is integrated format	3.088	**0.002**
Effect of CSR restatement when report is separate format	–0.255	**0. 799**
Effect of report format given CSR restatement	2.121	0.036
Effect of report format given no CSR restatement	0.760	0.449

Note: Panel A and B of Table 1 summarize the descriptive statistics and two-way ANOVA results for participants' perceived reliability of financial information. Panel C presents the follow-up simple effect test results. We manipulate (1) CSR restatement (present versus absent) and (2) report format (integrated versus separate report). The dependent variable, *Investor Confidence*, is the average of participants' responses two questions that asked about their perceptions about the *reliability* and *importance* of financial information. These questions are measured on an 11-point scale anchored from 0 = "strongly disagree" to 10 = "strongly agree". All *p*-values are two-tailed.

TABLE 3

Moderated Mediation Analysis Results

Panel A: Direct Paths							
	Investor Confidence (M)				**Investment (Y)**		
Predictors	**Coeff.**	**Std. Error**	**P-value**		**Coeff.**	**Std. Error**	**P-value**
CSR Restatement (X)	1.681	0.629	0.008		0.768	0.571	0.181
Investor Confidence (M)	NA	NA	NA		0.571	0.071	0.000
Report Type (W)	1.400	0.624	0.026		0.693	0.564	0.220
Interaction (X * W)	–0.806	0.394	0.043		–0.441	0.355	0.216
Constant	4.875	0.992	0.000		1.147	0.947	0.228
R^2		0.063				0.328	
F		3.552				19.292	
P-value		0.016				0.000	
We use Process Model 8 where X = independent variable; Y = dependent variable; M = mediator; and W= moderator. We coded the CSR restatement factor as follows: CSR restatement present = 1, and CSR restatement absent = 2. For the report type variable, integrated report = 1, and separate report = 2.							

Panel B: Indirect Effects of CSR Restatement on Investment Conditional on Report Type				
			Bootstrapped Confidence Interval	
Report Type (Moderator)	Indirect Path Coeff.	Bootstrapped Std. Error	Lower Limit	Upper Limit
Integrated Report	0.500	0.204	0.140	0.938
Separate Report	0.040	0.139	–0.225	0.320
	Index			
Index of moderated mediation	–0.460	0.240	–0.970	–0.031