



When it pays to be a friend: Investigating nonprofessional investors' judgments toward CSR companies following an accounting restatement

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ABSTRACT

Prior literature suggests that engagement in corporate social responsibility (CSR) creates an insurance effect that shields companies from the negative consequences of corporate missteps. We experimentally examine whether this protection extends to an accounting restatement and whether investors' attributions of the underlying reasons for this restatement affect their judgments. Results indicate that when a restatement occurs, non-professional investors evaluate high-performing CSR companies more favorably than their average-performing peers, but only when the misstatement appears unintentional. We also incorporate the Stereotype Content Model to test whether feelings of warmth and competence toward the company affect non-professional investor judgments. We document that absent a restatement, feelings of warmth mediate the relationship between CSR performance and investor judgments through competence. Following a misstatement, however, warmth directly mediates that relationship. Our results provide insights into specific psychological mechanisms and boundary conditions of the previously documented insurance effect of CSR performance.

1. Introduction

Corporate social responsibility (CSR) activities help companies to obtain a variety of benefits, such as boosting reputation and partners' trust (Miller, Eden, and Li, 2020; Rangan, Chase, and Karim, 2015), energizing stakeholders (Johansen, 2010; Kemper, Schilke, Reimann, Wang, and Brettel, 2013), and improving risk management (Kytte and Ruggie, 2005).¹ Companies issuing CSR reports are less likely to engage in high-profile misconduct and more likely to experience smaller stock price reductions when misconduct occurs (Christensen, 2016; Wans, 2020). Additionally, companies with a favorable CSR reputation pay lower fines for detected misconduct (Hong, Kubik, Liskovich, and Scheinkman, 2019). These results indicate an insurance effect arising from CSR activities.

Prior research, mainly from the archival literature and conducted traditionally at the organizational level, provides insights into the factors behind this insurance effect. These studies conclude that CSR activities signal a corporate willingness to engage in altruistic

behaviors—sometimes even at the expense of the opportunistic pursuit of profits—and that such behaviors create reputational capital among various stakeholders (Cho and Patten, 2007; Feng and Malik, 2020; Lin and Xiaobo, 2018; Minor and Morgan, 2011). At the same time, researchers warn that the results are susceptible to specific contexts (Cordeiro and Tewari, 2015; Godfrey, Merrill, and Hansen, 2009). In particular, since corporations often engage in CSR activities to increase their societal legitimacy and respond to accountability pressures (Lanis and Richardson, 2012; Patten, 2002), the insurance effect of CSR engagement is likely contingent on stakeholders' perceptions of corporate motives. Therefore, a more nuanced understanding of this effect requires “person-focused CSR research” executed through experimental lenses (Gond, El Akremi, Swaen, and Babu, 2017, 225).

We examine the boundaries of the CSR insurance effect by applying a person-focused perspective in the context of non-professional investor behavior. Specifically, we conduct an experiment to explore how CSR engagement mitigates the negative consequences of accounting restatements and how the attributed reason for the restatement (error vs.

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¹ Prior CSR research examines both CSR reporting (i.e., whether or not a company participates in CSR activities and issues a report) and CSR performance (i.e., performance relative to the company's competitors). The focus of our experiment is on CSR performance.

intentional misstatement or accounting irregularity that suggests fraud) affects investor judgments. Our results illustrate specific psychological mechanisms behind the CSR insurance effect, including mediating factors.

We use the Stereotype Content Model (SCM) as our theoretical framework for selecting mediating factors. The SCM, a popular framework in social psychology and marketing, highlights the crucial role of two separate factors—warmth and competence—in judgments across various domains. In particular, marketing studies show that consumers often form quick attitudes toward a company based primarily on the complex interaction of two independent factors: 1) assessment of the company's motives (i.e., warmth), and 2) assessment of the company's business acumen (i.e., competence) (Aggarwal, 2004; Fiske, Cuddy, and Glick, 2007; Fiske, Cuddy, Glick, and Xu, 2002). We extend these findings on consumer behavior to an investment context. Specifically, we expect that investors will perceive high-performing CSR companies as warmer/friendlier than their average-performing peers due to the altruistic nature of CSR activities, and that this positive assessment of warmth will lead to more favorable investor judgments toward high-performing CSR companies. Furthermore, we expect that the insurance effect will allow companies that experience a restatement to continue to be seen as having a higher investment potential unless investors attribute the restatement to an intentional misstatement.

We experimentally test our hypotheses using non-professional investors recruited through Amazon Mechanical Turk (MTurk). We manipulate company CSR performance (high vs. average) and the attribution for the restatement (likely fraud or intentional misstatement vs. error or unintentional misstatement). In the first part of the experiment, participants read information about a company, provided initial judgments about its warmth and competence, and evaluated its investment potential. After providing these assessments, participants received new information that the company announced a restatement of its prior financial results. Participants subsequently re-evaluated the company's investment potential and reassessed its warmth and competence.

Consistent with our predictions, results indicate that prior to a restatement, non-professional investors perceive high-performing CSR companies as warmer, more competent, and a higher investment potential than their average-performing peers. Following a restatement, non-professional investors continue to attribute a higher investment potential to high-performing CSR companies, but only when the underlying misstatement is unintentional. After intentional misstatements, assessments of investment potential are similar between average-performing and high-performing CSR companies.

We also find that the assessment of warmth mediates the relationship between CSR performance and judgments about investment potential both before and after the restatement. However, the mediation mechanisms differ between the two situations. Before the restatement, perception of warmth drives initial assessments of investment potential *indirectly* through its effect on competence, which is consistent with the presence of a halo effect.² Additionally, absent the restatement, competence directly affects investors' evaluations of investment potential. These two distinct mediation paths suggest the presence of both affective and cognitive elements in investors' initial reasoning. After a restatement, however, the mediating effect of competence disappears,

² As coined by American psychologist E. L. Thorndike, the term "halo effect" refers to the common cognitive bias of automatically transferring evidence-based judgments about certain aspects of a person, company, or phenomenon to other unrelated aspects of that same person, company, or phenomenon [Thorndike, 1920; see also Kahneman, 2011 and Gabrieli, Lee, Setoh, and Esposito, 2022 for an extensive review].

and warmth *directly* influences evaluations of the investment potential. This mediating path suggests that the affective response assumes a dominant role following a restatement, which is more consistent with the presence of a compensating effect.³ In addition, we report that the mediation paths are similar for both intentional and unintentional misstatements (i.e., a lack of any moderating effect of intentionality on the mediation effects of warmth and competence).

In sum, we conclude that non-professional investors, similar to consumers, are prone to stereotypic reasoning in their judgments. The presence of a stronger warmth sentiment toward high-performing CSR companies is likely one of the psychological factors behind the insurance effect previously documented in archival studies (e.g., Christensen, 2016; Wans, 2020). However, we suggest that the benefits of high CSR performance have limitations since they disappear when investors attribute the restatement to intentional misconduct.

We contribute to the prior literature in several ways. First, we extend prior archival studies by identifying boundary conditions for the benefits of CSR engagement in the context of accounting restatements. To our knowledge, only Wans (2020) and Bartov, Marra, and Momenté (2021) explore CSR benefits in this context at the organizational level.⁴ Instead, we use an experimental setting to highlight that investors' attributions of the underlying reason for the restatement as error (unintentional misstatement) vs. potential fraud (intentional misstatement) moderates the impact of CSR performance on investment judgment and limits the CSR insurance effect.

Second, we extend prior literature that explores warmth as a mediating factor between CSR engagement and various corporate outcomes into the context of investment judgments. Shea and Hawn (2019) report that warmth mediates the relationship between CSR and purchase intentions, and Hofland (2021) documents the mediating role of warmth in the relationship between perceptions of CSR sincerity and customer loyalty. Our study demonstrates that warmth plays a similar role in the judgments of non-professional investors. In particular, we show that absent any misconduct, investors perceive high-performing CSR companies as warmer than their average-performing CSR peers, and that this feeling of warmth leads to a higher assessment of investment potential for the high-performing CSR companies.

Third, we suggest consideration of warmth as a factor in the previously documented insurance effect of CSR in the context of accounting restatements (Bartov et al., 2021; Wans, 2020). We report process evidence that enhances "confidence in the primary findings" of previous archival studies by Wans (2020) and Bartov et al. (2021) "by providing insight into why this effect occurs" (Asay, Guggenmos, Koonce, and Libby, 2021, 5). In addition, we highlight nuances in the mediating mechanisms of warmth that extend the limited literature on the differential impact of warmth vs. competence in decision-making (Judd, James-Hawkins, Yzerbyt, and Kashima, 2005). Specifically, we observe serial mediation through competence prior to the restatement, which is consistent with the presence of a halo effect. After the restatement, we observe the disappearance of the serial mediation, which is consistent with a reduction of the halo effect, combined with the emergence of the direct mediation of warmth, which is more consistent with the rise of the compensation effect.

³ Alfred Adler (1917) introduced the compensation effect, which refers to the conscious or subconscious strategy to cover weaknesses, inadequacies, failures and feelings of frustrations related to one performance area through pursuit and recognition of excellence in another, often unrelated area. In recent SCM literature, researchers have observed that the compensation effect takes precedence over the halo effect in certain circumstances, such as when consumers associate a positive signal on one dimension (e.g., warmth) as a negative signal on another dimension (e.g., competence), and vice versa (Kim and Ball, 2021).

⁴ In another relevant archival study, Zhang, Shan, and Chang (2021) explore the impact of the quality of CSR disclosures occurring at the same time as accounting restatements on the accuracy of analysts' forecasts and firm value.

Overall, our findings highlight the importance that warmth plays in the CSR insurance effect in the context of financial restatements caused by reporting mistakes in complex environments. However, this sentiment of warmth wanes when restatements are attributed to management misconduct, which becomes a boundary condition for the insurance effect observed in prior literature. These findings might assist both corporate leaders and regulators in developing a more nuanced understanding of investors' reactions toward financial restatements. Our results suggest a benefit from cultivating investors' feelings of warmth through CSR disclosures, since such feelings are likely to mitigate emotional investor reactions toward unavoidable reporting errors and, therefore, decrease market volatility as investors exercise greater patience with companies that experience adverse events.

2. Theory development and hypotheses

2.1. CSR benefits

Corporate social responsibility is “a business organization’s configuration of principles of social responsibility, processes of social responsiveness, and policies, programs, and observable outcomes as they relate to the firm’s societal relationships” (Wood, 1991, 693). Most CSR disclosures are currently voluntary in the United States, and corporations increasingly report CSR activities through their annual reports and websites to boost their corporate image (Lindgreen and Swaen, 2010; Wanderley, Lucian, Farache, and de Sousa Filho, 2008).⁵

High-performing CSR companies not only create a favorable perception of their brand but also obtain measurable economic advantages, such as higher return on assets (Miller et al., 2020), lower cost of capital (Dhaliwal, Li, Tsang, and Yang, 2011), higher forecasted future cash flows (Plumlee, Brown, Hayes, and Marshall, 2015) and greater stock liquidity (Gao, Dong, Ni, and Fu, 2016). Both archival and experimental studies highlight that market participants consider CSR-related information in their investment decisions (e.g., Brown-Liburd, Cohen, and Zamora, 2018; Gödker and Mertins, 2018; Stuart, Bedard, and Clark, 2020). For instance, Dhaliwal, Radhakrishnan, Tsang, and Yang (2012) report more accurate analyst forecasts for companies that issue CSR reports. Kim, Park, and Wier (2012) document that high-performing CSR companies have higher earnings quality than their average-performing peers. Harjoto, Hoje, and Kim (2017) demonstrate that CSR activities decrease stock return volatility. Elliott, Jackson, Peecher, and White (2014) find in an experimental setting that high (low) CSR performance can positively (negatively) influence investors' perceptions of a company's fundamental value when investors neglect to assess CSR performance explicitly. Reimsbach, Hahn, and Gürtürk (2018) document that voluntary assurance of sustainability reports increases investment attractiveness. Additionally, high CSR performance provides an insurance benefit for companies when negative events occur (Christensen, 2016; Minor and Morgan, 2011; Shiu and Yang, 2017).

2.2. Literature on the psychological microfoundations of CSR

Although archival literature has accumulated ample evidence on the various benefits of CSR engagement, Aguinis and Glavas (2012) recognize a need for “research at micro levels of analysis (i.e., individuals and teams), and ... for methodological approaches that will help address ... substantive knowledge gaps” related to the psychological motivations of an individual CSR stakeholder (932).⁶ These micro level studies (see

⁵ Although the U.S. Securities and Exchange Commission has proposed regulating some climate disclosures (e.g., Gensler, 2022), companies will still have opportunities to voluntarily disclose CSR or environmental, social, and governance (ESG) metrics regardless of present or future regulation.

⁶ Much of the current literature is archival-based and thus unable to provide insights at an individual- or team-level of analysis.

Gond et al., 2017 for a review) strive to address “the effects and experiences of CSR ... on individuals (in any stakeholder group) as examined at the individual level of analysis” (Rupp and Mallory, 2015, 216).

The number of studies on CSR microfoundations has grown in recent years, but the extant research focuses mainly on employees and customers (e.g., Bridoux, Stofberg, and den Hartog, 2016; El Akremi, Gond, Swaen, De Roeck, and Igalens, 2018; Jones, Willness, and Madey, 2014). For example, prior literature suggests that care-based concerns and the search for meaningful existence are important moral drivers of CSR initiatives across all organizational levels (Hibbert and Cunliffe, 2015). Scholars have shown the positive impact of CSR initiatives on employee recruitment (Jones et al., 2014), employee relations and engagement (Glavas and Piderit, 2009), and other favorable organizational outcomes (see Rupp and Mallory (2015) for a detailed review). We are not aware of any management studies on investors' judgment in the tradition of CSR microfoundations research, although experimental literature in accounting has started to explore the impact of various aspects of CSR disclosures in this context (Bucaro, Jackson, and Lill, 2020; Hoang and Phang, 2021; Hoang and Trotman, 2021).

2.3. Stereotypical reasoning as a model for understanding non-professional investors

The recent controversy around Robinhood traders and GameStop's short squeeze indicates the increasingly important role of non-professional investors and their ability to disrupt the long-established status quo in capital markets (e.g., Fisch, 2022). Anecdotal evidence from the business press suggests that these investors distrust institutions, ignore the traditional investment-evaluation models, and often decide to invest in certain companies because of affect or desire for social justice, even at the high risk of financial losses (Chew, 2015; Kauflin, Gara, and Klebnikov, 2020). Such behavior indicates a need to complement traditional economic models with psychology-based frameworks to explain non-professional investors' preferences and actions.

The Stereotype Content Model (SCM), which has been tested extensively in social psychology, is one such framework (e.g., Cuddy, Fiske, and Glick, 2008; Cuddy, Norton, and Fiske, 2005; Fiske et al., 2002, 2007), and we use it to explore the impact of CSR on the reasoning of non-professional investors. According to the SCM, people strive to decrease cognitive load in social interactions by limiting their judgment of others to two main dimensions: warmth and competence (Fiske et al., 2002, 2007). Warmth captures the assessment of another party's intent in a relationship and relates to attributes such as friendliness, tolerance, helpfulness, and sincerity. Thus, warmth includes the affective reaction toward another party and trust of a third party's motives. Competence, on the other hand, captures assessments of a third party's ability to carry out plans and relates to attributes such as intelligence, knowledge, effectiveness, and efficiency.

Although individuals may rely on both dimensions, scholars stress that relationships between warmth and competence depend on context and perspective. For example, when people make a single, standalone assessment, there is usually a strong positive correlation between warmth and competence, consistent with the halo effect and “shared evaluative meaning” (Abele and Wojciszke, 2014, 237). Alternatively, studies such as Belmi and Pfeffer (2018) and Kim and Ball (2021) demonstrate the existence of a compensation effect, which occurs when evidence of strength in one dimension (i.e., warmth) might be interpreted as a signal of weakness in another dimension (e.g., competence), or vice versa.

While most SCM-based research is conducted in social psychology and relates to interpersonal interactions, business researchers show that fundamental dimensions of warmth and competence affect individuals' broader attitudes toward organizations (Aaker, Vohs, and Mogilner, 2010), brands (Aaker, 1997; Fournier, 1998; Kervyn, Fiske, and Malone, 2012), and crowdfunding initiatives (Johnson, Stevenson, and Letwin, 2018; Oo, Creek, and Shappard, 2022). Shea and Hawn (2019) further

extend the use of the SCM framework into the CSR context by examining the impact of CSR activities on individual assessments of a company's warmth, competence, purchase intentions, and corporate reputation. They report that participants perceive companies with fair manufacturing practices abroad (i.e., CSR companies) as warmer and more competent than companies associated with unfair manufacturing practices.

We build upon [Shea and Hawn \(2019\)](#) to hypothesize that the sentiment of non-professional investors (i.e., retail investors) toward CSR companies resembles that of consumers. Prior research in finance stresses that retail investors use different information sources and decision heuristics than professional investors ([Barber and Odean, 2008](#); [Frieder and Subrahmanyam, 2005](#)). In particular, retail investors spend less time gathering and processing direct investment-related information such as financial fundamentals. Their decision to buy or sell is driven more by the intensity of the media coverage, brand recognition of certain stocks, or peer recommendations ([Chen, De, Hu, and Hwang, 2014](#); [Da, Engelberg, and Gao, 2011](#)). Scholars call this behavior *attention-based* trading, as opposed to the *information-based* trading of professional investors, and the impact of retail investor sentiment on stock returns has been well documented ([Kumar and Lee, 2006](#)).

Combining these insights from the retail investor literature in finance with the findings from SCM studies in marketing, we expect that non-professional investors will generally perceive high-performing CSR companies as warmer and friendlier. This expectation follows directly from the results of [Shea and Hawn \(2019\)](#) and is consistent with findings from other business research that has not explicitly used the SCM framework ([Døskeland and Pedersen, 2015](#); [Elliott et al., 2014](#); [Ferguson and Flynn, 2016](#); [Friedman and Heinle, 2016](#); [Peifer, 2014](#)). For example, [Elliott et al. \(2014\)](#) document a higher investor affect toward high-performing CSR companies. [Friedman and Heinle \(2016\)](#) highlight an additional emotional satisfaction gained by investors from an association with a CSR company. [Døskeland and Pedersen \(2015\)](#) stress that morality is a factor for decisions of socially responsible investors, while [Ferguson and Flynn \(2016\)](#) mention "warm glow preferences" to describe utility derived from moral economic choices.

Similar to [Shea and Hawn \(2019\)](#), we also expect that non-professional investors will perceive a high-performing CSR company as more competent. [Shea and Hawn](#) attribute their results to the halo effect documented in prior SCM literature; absent direct information on competence, subjects infer competence using diagnostic behavior related to warmth ([Judd et al., 2005](#); [Rosenberg, Nelson, and Vivekananthan, 1968](#)). This expectation of a positive correlation between warmth and competence in the absence of the other diagnostic information is also consistent with the classical theory of cognitive consistency and reluctance to cognitive dissonance ([Abele and Wojciszke, 2014](#); [Festinger, 1957](#)). In addition, [Peterson and Vredenburg \(2009\)](#) link CSR initiatives to perceptions of higher managerial competence, while multiple archival studies confirm the positive impact of CSR on management quality (e.g., [Boubaker, Cellier, Manita, and Saeed, 2020](#); [Cho and Lee, 2017](#)).

Finally, we hypothesize that non-professional investors view a high-performing CSR company as a more favorable investment than its average-performing peers, which is consistent with [Shea and Hawn \(2019\)](#) and other prior literature (e.g., [Brown-Liburd et al., 2018](#); [Chernev and Blair, 2015](#); [Elliott et al., 2014](#)). Specifically, [Chernev and Blair \(2015\)](#) report that consumers attribute the higher quality and better performance to the products of CSR companies. [Shea and Hawn \(2019\)](#) document that participants perceive CSR firms as more reputable and express a higher intent to purchase these companies' products. As a result, we formulate the following hypotheses:

H1a. Non-professional investors attribute higher levels of warmth to high-performing CSR companies than to average-performing CSR companies.

H1b. Non-professional investors attribute higher levels of competence

to high-performing CSR companies than to average-performing CSR companies.

H1c. Non-professional investors assess higher investment potential to high-performing CSR companies than to average-performing CSR companies.

2.4. SCM and the mediating role of warmth in investor judgments

According to the SCM, although people consistently evaluate a third party's warmth and competence, the mechanisms of these evaluations differ. Specifically, warmth assessments occur more rapidly, precede the competence assessments, and carry greater weight in behavioral reactions ([Fiske et al., 2007](#)). Scholars stress that this primacy of warmth is deeply rooted in the human psyche, evident in language, and is an evolutionary outcome "because social relationships are indispensable for human beings. As social groups can share resources and information, diffuse risk, and help to overcome stress or threat, it should be a selective advantage to possess communal traits necessary to build and maintain social relationships" ([Abele and Wojciszke, 2014, 213](#); see also [Fiske et al., 2007](#); [Kenworthy and Tausch, 2008](#); [Wojciszke, 2005](#)).

In particular, [Fiske et al. \(2007\)](#) suggest that when individuals receive information about behavior that signals orthogonal warmth and competence, warmth influences the valence of the behavior (i.e., whether overall behavior is perceived as positive or negative).⁷ In contrast, competence only affects the intensity of this positive or negative assessment (e.g., [Wojciszke, Bazinska, and Jaworski, 1998](#)). In other words, people interpret warmth as a solid and consistent signal of behavioral intentions, but their interpretation of someone's competence is more convoluted and contingent on the warmth assessment. As noted by [Abele and Wojciszke \(2014, 218\)](#), "Competence and assertiveness are positively evaluated in a decent person, but they are negatively evaluated in a villain." Similarly, [Kenworthy and Tausch \(2008\)](#) document that people assess traits associated with higher warmth as more accurate and stable over time than those associated with competence. In addition, [Shea and Hawn \(2019\)](#) report that warmth, but not competence, mediates the relationship between CSR performance and purchase intentions. Consistent with these prior findings, we expect that initial investor assessments of warmth will mediate the relationship between CSR performance and investor judgments, and we propose the following hypothesis:

H2. Non-professional investors' assessment of warmth mediates the relationship between CSR performance and assessment of investment potential.

We do not hypothesize the exact mediating effect of competence since the current literature is inconclusive. From one point of view, the halo effect suggests a serial mediation path where CSR affects warmth and warmth affects competence. Alternatively, decreased assessments of competence due to a restatement may dominate investors' decisions. Therefore, we explore the nature of these relationships in our supplementary analyses without hypothesizing them *ex ante*.

2.5. CSR engagement and the insurance effect

Our first two hypotheses relate to investor sentiment toward CSR companies absent any information about the adverse events. By testing the first two hypotheses, we extend the findings of the first experiment of [Shea and Hawn \(2019\)](#) by replicating its results in a different context. Whereas [Shea and Hawn \(2019\)](#) examine the impact of CSR engagement

⁷ In the example, "Bob defended an absent friend against groundless accusations, but he spoke in such an illogical and obscure way that he could not persuade anybody," warmth assessments on average carry more weight than competence assessments.

on purchase intentions, we focus on non-professional investors' sentiment; both studies similarly investigate the mediating role of warmth in this process. Our main focus, however, is on the insurance effect of CSR—or the protection that CSR engagement provides for some adverse events—and the boundary conditions of this effect.

Prior studies provide many examples of a CSR insurance effect. For example, [Minor and Morgan \(2011\)](#) document lower stock price declines following a product recall announcement for companies engaging in CSR activities. [Zahller, Arnold, and Roberts \(2015\)](#) find that CSR reporting protects companies from negative investor reactions following an industry scandal. When companies are implicated in high-profile CSR misconduct (e.g., bribery, kickbacks, discrimination), [Christensen \(2016\)](#) reports smaller stock price decreases for companies that had previously released CSR reports. Archival scholars explain the underlying mechanisms of this protection through legitimacy theory ([Cho, Guidry, Hageman, and Patten, 2012](#); [Patten, 1992](#)) and the legal construct of *mens rea*, which relates to a perpetrator's intent to harm ([Christensen, 2016](#); [Godfrey, 2005](#)). Under both perspectives, CSR disclosures generate moral capital that affects stakeholders' assessments of corporate legitimacy and attributions of *mens rea*. As a result, stakeholders give high-performing CSR companies the benefit of the doubt when a negative event occurs, prompting more favorable reactions and outcomes ([Christensen, 2016](#); [Godfrey et al., 2009](#); [Shiu and Yang, 2017](#)).

At the same time, researchers warn that the CSR insurance effect is context-specific and highly sensitive to situational factors (e.g., [Elliott, Grant, and Rennekamp, 2017](#); [Godfrey et al., 2009](#)). In fact, recent archival studies suggest that high CSR performance can actually exacerbate rather than attenuate the negative consequences of some missteps. For instance, [Cooper, Raman, and Yin \(2018\)](#) document that a higher CSR score is associated with a stronger negative impact of greenhouse gas emissions on a company's market value. [Bartov et al. \(2021\)](#) report that strong CSR performance increases negative market reactions to the announcement of fraudulent misstatements.

2.6. Accounting misstatements and investors' judgments

Our study specifically focuses on a restatement of the corporate financial statements. Prior research on the insurance effect of CSR has mostly explored adverse corporate situations that have some relationship to CSR goals (e.g., unfair labor practices, pollution, or product quality). Instead, we examine whether and under which circumstances this benefit also occurs following a restatement of the financial statements, an event not directly related to CSR activities.

Stakeholders usually perceive material misstatements that warrant a restatement of previously issued financial statements as a severe failure of the corporate accounting function. An announcement of a restatement decreases shareholder wealth of the restating company ([Palmrose, Richardson, and Scholz, 2004](#)), undermines public trust, and causes a broader industry contagion effect ([Gleason, Jenkins, and Johnson, 2008](#)). At the same time, restatements may occur for a variety of reasons. Therefore, scholars stress the need to distinguish restatements caused by simple errors from those attributed to irregularities, since suspected irregularities cause much stronger adverse market reactions ([Hennes, Leone, and Miller, 2008](#); [Palmrose et al., 2004](#)).

In particular, [Hennes et al. \(2008\)](#) suggest identifying deliberate misreporting (or intentional misstatement in our terminology) as any restatement that has one of the following characteristics: 1) the restatement announcement explicitly uses different variants of the words "fraud" or "irregularities;" 2) the restatement relates to Securities and Exchange Commission (SEC) or Department of Justice investigations, or 3) the restatement is associated with any other

investigations into matters. [Hennes et al. \(2008\)](#) further validate this classification through empirical tests by demonstrating a positive association between intentional misstatements and both the probability of securities class action lawsuits and stronger negative market reactions. The paper also reports higher CEO and CFO turnover rates for intentional restatements in comparison to restatements due to errors. In sum, [Hennes et al. \(2008\)](#) suggest that their approach, "although not a perfect measure of managerial intent (because management intent is impossible to actually observe ... appears to be very effective at capturing important differences in restatements" (1491).

This evidence from [Hennes et al. \(2008\)](#) and other archival literature on the differences in various consequences of restatements attributed to errors versus those attributed to deliberate misreporting are consistent with findings from limited experimental studies (e.g., [Asay and Hales, 2018](#); [Hamilton and Smith, 2021](#)) that link the causes of this effect to the concept of management scientist, which is a legal standard often used in the context of securities fraud (e.g., [Langevoort, 2006](#); [Olazabal, 2013](#)) and auditors' statutory liability (e.g., [Chambers, Reckers, and Reinstein, 2020](#); [Slavin, 1977](#)). It is an essential element of "subjective intent, willfulness or bad faith" to deceive, manipulate or defraud another party that is required to be shown in order to impose "harsh liability consequences" on the guilty party ([Langevoort, 2006, 16](#)); however, it is "difficult to establish because it implies a state of mind" which cannot be directly observed ([Slavin, 1977, 361](#)).

2.7. Attributed intentionality and investor judgment

Several recent experimental studies in accounting also confirm the relevance of attributed intentionality, or management scientist, for investors' and auditors' judgments. [Hamilton and Smith \(2021\)](#) demonstrate that managers are generally aware of the effect of perceived intentionality and thus strive to reduce perceptions of intentionality by omitting rather than directly misrepresenting crucial information in cases of fraudulent behavior. The authors also suggest that auditors fail to respond appropriately to these managerial tactics because auditors generally consider omissions to be unintentional errors and fail to adjust audit programs in response to what should be higher fraud risk. [Asay and Hales \(2018\)](#) report that cautionary disclaimers reduce investors' feelings of being wronged when investors suffer losses due to over-reliance on forward-looking statements that turned out to be false. However, this effect is present only when management provided these disclaimers in good faith and not when management knew that the positive forward-looking statements were misleading. In addition, [Koonce, Williamson, and Winchel \(2010\)](#) find that non-professional investors give management the benefit of the doubt in cases of inaccurate estimates unless those investors attribute these inaccuracies to management intent to deceive.

Building on these accounting studies and applying their findings to a CSR setting, we suggest that the presence of the CSR insurance effect depends on the attributed intentionality of the underlying misstatement which, in turn, depends on the extent to which the restatement-related information facilitates causal attributions. We posit that in the absence of explicit information on management wrongdoing, such as red flags suggested by [Hennes et al. \(2008\)](#), non-professional investors are more likely to give high-performing CSR companies the benefit of the doubt compared to average-performing companies. However, when information implies probable management wrongdoing, this benefit may disappear. In other words, investors will assess different investment potential for high-performing CSR companies versus average-performing CSR companies when the restatement is attributed to an error (unintentional misstatement) but will perceive no difference between high-performing CSR and average-performing CSR companies

when the restatement implies potential managerial misconduct (intentional misstatement).

We also expect that assessments of warmth will continue to mediate the relationship between CSR performance and non-professional investors' judgments. In fact, one could reasonably assume that the impact of warmth will become even stronger because warmth reflects an emotional component of non-professional investor judgment. Prior research shows that individuals use affect as a source of information in their decision-making processes (e.g., Schwarz and Clore, 1988), and an announcement of a restatement is likely to trigger an emotional response in parallel with a cognitive reaction. This discussion leads to the following hypotheses:

H3. Following a restatement, non-professional investors assess higher investment potential for high-performing CSR companies compared to average-performing companies, but only when the restatement is attributed to an unintentional misstatement.

H4. Following a restatement, non-professional investors' assessment of warmth mediates the relationship between CSR performance and assessment of investment potential.

3. Methods

3.1. Participants

We follow an approach that is similar to prior studies (e.g., Elliott et al., 2014; Elliott, Rennekamp, and White, 2018; Koonce, Miller, and Winchel, 2015; Stuart et al., 2020) to collect information from non-professional investors. Specifically, we recruited our participants using Amazon MTurk and required the following criteria: 1) current U.S. resident, 2) age 21+, 3) prior completion of at least 50 tasks on MTurk, and 4) an acceptance rate of at least 95% on MTurk. To ensure participants were a reasonable proxy for a non-professional investor, they first completed a set of pre-screen questions. Those who met the criteria for a non-professional investor were given a code that allowed them to access the experimental materials through Qualtrics.⁸

Initially, 146 individuals passed the screening checks and opened the link. Farrell, Grenier, and Leiby (2017) and Grenier, Reffett, Simon, and Warne (2018) emphasize the need for a performance-based compensation structure and the use of proper controls for studies utilizing MTurk to ensure data integrity. To incentivize participants to attend to the materials, they were paid \$0.10 for completing the task and offered a bonus of \$2.00 if they demonstrated attention to the task.⁹ Despite the presence of the bonus, 21 participants were dropped from the analysis for failing to correctly answer at least 8 (of 11) comprehension check questions and both manipulation check questions.¹⁰ One participant was dropped for completing the task in under five minutes. Our final analysis includes 124 participants.¹¹

⁸ We proxy for non-professional investors in accordance with Koonce et al. (2015), which required participants to have some prior personal investing experience and to have completed two accounting and/or finance classes. Shea and Hawn (2019) similarly recruit participants using MTurk, but as their study did not require participants to proxy for non-professional investors, that study imposed fewer restrictions on participant eligibility.

⁹ To measure attention to the task, we asked a series of 11 comprehension check questions throughout the task. Additionally, we asked two manipulation check questions at the end of the task. To motivate respondents to attend to information, respondents received a bonus if they correctly answered at least 8 of these 13 questions.

¹⁰ Our inferences remain the same if we raise the threshold for the comprehension questions to 9 correct responses (sample of 121 participants) or if we drop the requirement to pass comprehension check questions altogether (sample of 127 participants). The reported results also continue to hold if we use the full sample of 146 participants.

¹¹ We obtained IRB approval for the collection of all human subject data.

Participants range in age from 22 to 67 (mean = 36) with an equal split between women and men. Participants' self-reported familiarity with financial statements is 7.3, measured on a scale from 1 (not at all familiar) to 10 (very familiar), and their average professional work experience is 14 years. All participants have at least a high school diploma, and 83% have at least a bachelor's degree. We note no significant demographic differences across our experimental conditions. The demographic characteristics and experimental controls lead us to conclude that our participants are an appropriate proxy for non-professional investors.

3.2. Research design, experimental materials, and procedures

We conducted a 2 × 2 between-subjects experimental design and manipulated misstatement type (unintentional, intentional) and CSR performance (high, average). We adapted materials from Elliott et al. (2014) for our task and pilot tested them with accounting/MBA students prior to final data collection. After providing informed consent, participants were told that they had inherited the stock in a retail company, XYZ Stores. They read a short overview of the company, including a CSR report (see Appendix A).

Participants provided initial assessments of warmth, competence, and investment potential of XYZ. They then read a news release describing the discovery of a misstatement that caused a restatement (see Appendix B). After learning about this restatement, participants assessed the company's warmth, competence, and investment potential. Finally, they answered manipulation check questions and provided demographic information. On average, participants completed the case in 16 min. Fig. 1 outlines the experimental procedures.

3.3. Independent variables

We randomly assigned participants to one of four conditions. For the restatement attributed to intentional misconduct, the news release revealed that the CFO was "accused of intentionally preparing false financial information to help keep the stock price high" and that the SEC "has opened an investigation regarding the misconduct." For the restatement attributed to an error (unintentional misstatement), the announcement stated that the company misapplied a complex new accounting rule related to inventory and that the SEC declined to open an investigation because they found the corporate response to be appropriate.¹² In the CSR performance manipulation, participants in the high (average) CSR condition were told that the company was ranked 3rd (29th) out of 56 companies in its industry, and a short description of the company's efforts in environmental and community activities was provided for the high CSR condition.

3.4. Dependent variables

To determine investor views of the company's investment potential, we asked participants to indicate their agreement with the statement, "Investment in XYZ at its current price provides an opportunity for strong financial returns" both before and after they learn about the restatement. Responses were recorded on a 101-point scale, from -50 to

¹² The primary purpose of our intentionality variable is to manipulate the ease with which information facilitates a causal attribution of bad faith behind the restatement. An SEC investigation suggests a stronger preponderance of evidence of bad faith. In addition, the SEC's involvement in a restatement is a common proxy in archival research for the likelihood that top management was involved in creating the underlying misstatement (e.g., Palmrose et al., 2004; Palmrose and Scholz, 2004).

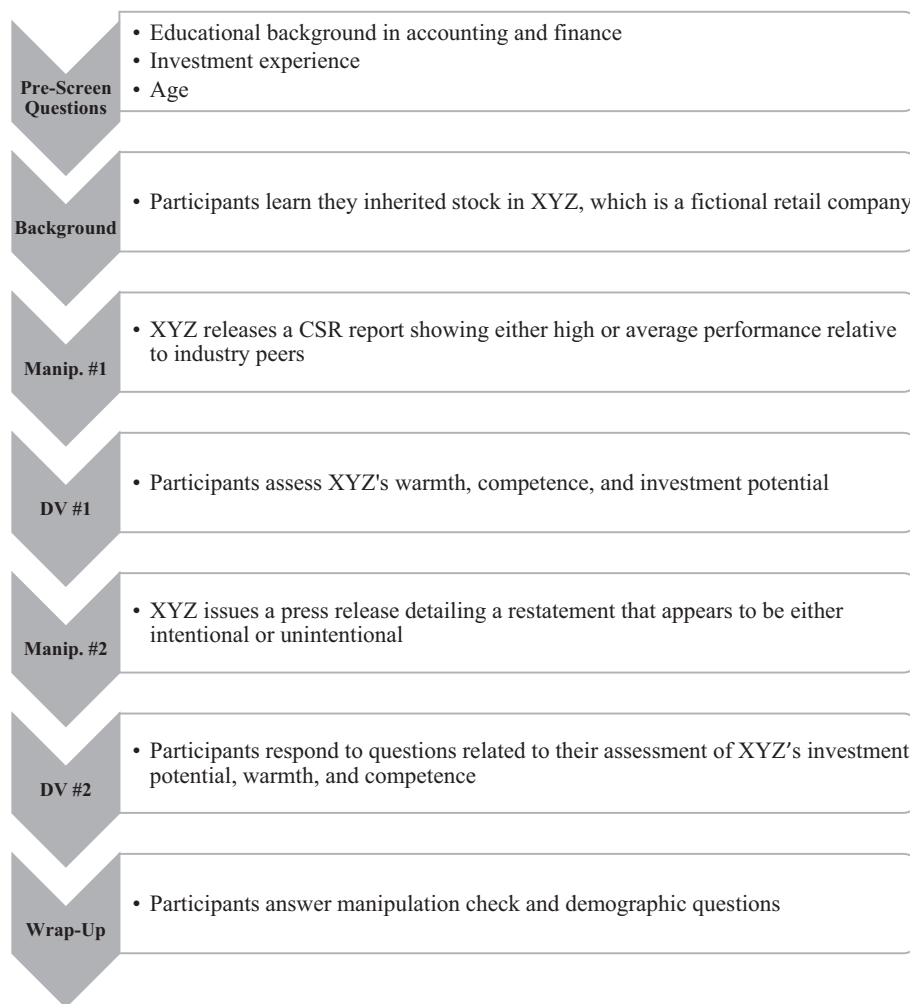


Fig. 1. Timeline of experimental procedures.

+50, with endpoints of “Strongly disagree” and “Strongly agree.”¹³ We measured participants’ initial assessments of warmth and competence by asking them to assess these characteristics on a 101-point scale, from –50 to +50. The endpoints for competence are “Incompetent” and “Competent.” We use the endpoints “Cold/unfriendly” and “Warm/friendly” to measure warmth.¹⁴

To calculate post-restatement residual feelings of warmth and

competence, we asked participants how much they would change their initial assessments following the restatement, also on scales from –50 to +50. The endpoints for warmth are “More cold/unfriendly” and “More warm/friendly,” and the endpoints for competence are “More incompetent” and “More competent.” Residual feelings of warmth and competence were calculated by adjusting a participant’s initial assessment by their revision.

4. Results and discussion

4.1. Manipulation checks

To assess the effectiveness of our CSR performance manipulation, we asked participants to recall the CSR score for XYZ. To assess the effectiveness of the manipulation related to the causal attribution for a restatement, we asked participants to recall the specific reason for the restatement. Due to the previously discussed concerns about the attention of MTurk users, we required participants to answer both questions correctly to remain in the analysis.¹⁵ Additionally, we asked participants to what degree they believe that the accounting misstatement was intentional on a 101-point scale from –50 (clearly unintentional) to +50 (clearly intentional). Participants reported a significantly higher mean

¹³ Following the restatement, we also asked participants two additional investment-related questions. Various extraction methods always ended with a single factor when using an eigenvalue cut-off of 1. Our conclusions do not change if we use these factor scores as a dependent variable in our analysis. We also transformed our continuous dependent variable for the investment decision into a dichotomous variable by recoding all participants’ responses greater than zero into one, and all participants’ responses at zero or less into zero. We conducted chi-square tests for this transformed dependent variable separately for conditions of unintentional and intentional misstatement. We also performed two-factor logistic regression on the full sample of 124 observations. The inferences from these analyses are consistent with those from our parametric tests.

¹⁴ Though individuals clearly develop emotions toward companies (Malär, Krohmer, Hoyer, and Nyffenegger, 2011), vocabulary to describe such emotions may vary. Our pilot data suggested that participants have differing views regarding the term *warm* when describing a company, so we included a common synonym, *friendly*, to create a consistent interpretation of this term. Similarly, Aaker, Garbinsky, and Vohs (2012) use warmth and friendliness to assess the warmth construct in the context of attitudes toward brands.

¹⁵ Requiring only one manipulation check question would result in an additional 17 participants. Results are similar and inferences do not change if these participants are included in the analysis.

Table 1
Participants' pre-restatement assessment of warmth and competence.

Characteristic	Average CSR	High CSR	F-statistic	p-value ^a
	<i>n</i> = 60	<i>n</i> = 64		
	Mean (st. dev.)	Mean (st. dev.)		
Warmth	17.33 (14.47)	34.72 (9.86)	61.81	<0.001
Competence	29.48 (13.27)	40.59 (8.59)	30.99	<0.001
Investment potential	26.52 (13.66)	33.67 (14.37)	8.05	0.003

Using a scale from -50 to 50, participants provided initial assessments of the company's warmth, competence, and investment potential.

^a One-tailed.

for the intentional condition ($F = 58.20$, $p < 0.01$, two-tailed).¹⁶ Thus, we conclude that our manipulations for the two independent variables were successful.

4.2. Pre-restatement assessments

We report participants' pre-restatement assessments of warmth and competence as well as their assessment of investment potential in Table 1. Statistics reported in Table 1 confirm that participants perceive high-performing CSR companies as significantly warmer and more competent than their average-performing peers. Participants assessed warmth at 34.72 for high-performing versus 17.33 for average-performing CSR companies ($p < 0.01$, one-tailed) and competence at 40.59 for high-performing versus 29.48 for average-performing CSR companies ($p < 0.01$, one-tailed). Additionally, participants initially assess investment potential to be greater for high-performing CSR companies (33.67 versus 26.52, $p < 0.01$, one-tailed). Thus, we find evidence that non-professional investors develop more positive sentiments toward high-performing CSR companies and view these companies as a more promising investment opportunity than their average-performing peers, which is consistent with H1.

4.3. Mediating impact of warmth on assessment of investment potential

H2 predicts that the assessment of warmth mediates the relationship between CSR performance and the assessment of investment potential. Recent literature suggests using bootstrapping, a nonparametric resampling procedure, as a more robust and powerful test for mediation than the commonly used approach described in Baron and Kenny (1986) or the traditional Sobel's test (see Preacher and Hayes, 2004, 2008; Preacher, Rucker, and Hayes (2007) for a review). We follow these suggestions and first test H2 using Model 4 of the PROCESS procedure in SPSS (see Hayes (2018) for more details about the Process procedure).¹⁷ We use assessment of investment potential as our dependent variable, CSR performance as the independent variable, and initial assessment of warmth as the mediator (see Fig. 2, Panel A). Based on 5000 bootstrap samples, the reported 95% confidence interval for the unstandardized (standardized) indirect effect runs from 0.23 (0.02) to 5.91 (0.39).¹⁸

¹⁶ We also conducted additional robustness tests by removing from our sample all participants in the unintentional condition who selected 0 or greater on this question (11 subjects) and participants in the intentional condition who selected 0 or less on this question (17 subjects). The results that we discuss below continue to hold for this smaller sample of 96 participants.

¹⁷ Serang, Jacobucci, Brimhall, and Grimm (2017) suggest an alternative method of testing mediation through exploratory mediation analysis via regularization (XMed). However, the PROCESS procedure remains a more common test for these purposes and leads to more conservative inferences, as illustrated in Serang et al. (2017).

¹⁸ Standardized results reported here and later in the paper are untabulated.

Since both sets of numbers are located on the same side of the zero point, this procedure indicates that the initial assessment of warmth mediates the relationship between CSR performance and the assessment of investment potential (unstandardized indirect effect = 2.73; completely standardized indirect effect = 0.19). The two-tailed p -value of the traditional Sobel test is <0.01 .

Although we do not make a formal prediction about the role of competence, some prior evidence suggests that an assessment of warmth may also affect people's judgments and actions through an assessment of competence (Shea and Hawn, 2019). Thus, we also examine the joint impact of warmth and competence on the assessment of investment potential through a serial mediation model (PROCESS Model 6), where the warmth sentiment precedes and influences the assessment of competence.¹⁹ These results are presented in Fig. 2, Panel B. Two mediation paths are significant: CSR→Warmth→Competence→Investor Judgment (coefficient for indirect effect = 1.77; the confidence interval does not include zero) and CSR→Competence→Investor Judgment (coefficient for indirect effect = 1.50; the confidence interval does not include zero). This result provides evidence that warmth affects investor judgment through competence which is consistent with a halo effect. Additionally, competence directly affects initial investor judgment. We also conduct pairwise comparisons between these two indirect effects and find that they are similar in magnitude (untabulated). Overall, our results support H2.

4.4. Post-restatement assessment of investment potential

H3 predicts that non-professional investors will view high-performing CSR companies more favorably after the restatement, but only when the underlying misstatement is unintentional. Table 2 presents the results of statistical tests of H3, including descriptive statistics, tests of simple main effects, results of conventional and contrast-coded analysis of variance (ANOVA), and a quantitative evaluation of the contrast variance residual (q^2 metric) suggested by Guggenmos, Piercey, and Agoglia (2018). Results of a conventional ANOVA reported in Panel C highlight the significant impact of CSR performance on investor judgment. Furthermore, tests of simple main effects reported in Panel B indicate that investors judge high-performing CSR companies marginally more favorably than average-performing CSR companies when a

¹⁹ We use a serial mediation model rather than a parallel mediation model because prior research has shown that warmth seems to be activated more quickly and carries greater weight in evaluations (Fiske et al., 2007).

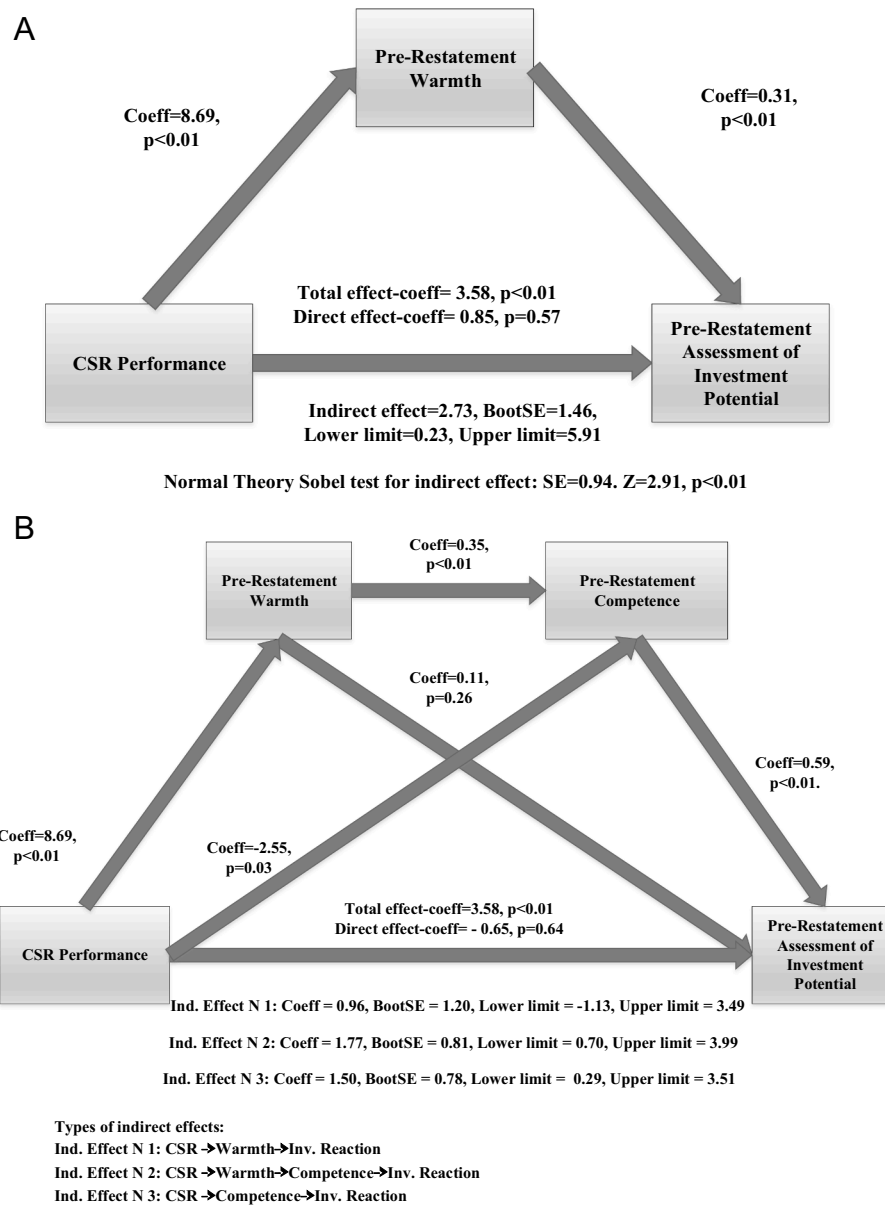


Fig. 2. Pre-restatement mediation models.

Panel A: PROCESS procedure model 4 (single mediation). Sample size = 124.

Panel B: PROCESS procedure model 6 (serial mediation). Sample size = 124.

misstatement is unintentional ($t = 1.64, p = 0.05$, one-tailed) but not when a misstatement is intentional ($t = 0.78, p = 0.22$, one-tailed).²⁰ We complement these results with a contrast-coded ANOVA (reported in Panel D), which is especially suitable to test the ordinal interaction that we predict in H3 and observe in Fig. 3 (Buckless and Ravenscroft, 1990; Guggenmos et al., 2018).

To provide these additional insights from contrast coding, we assign

²⁰ The use of nonparametric tests conducted separately for two groups—unintentional misstatement and intentional misstatement—leads to similar inferences. For unintentional misstatement conditions, there is a significant difference in the assessment of investment potential between high CSR and average CSR companies as the two-tailed p -value of Mann-Whitney U test or Kruskal-Wallis test (results of both tests will be the same in our circumstances) is 0.044. There is no difference in the assessment of investment potential between high CSR and average CSR companies for an intentional misstatement as the two-tailed p -value of Mann-Whitney U test or Kruskal-Wallis test is 0.511.

a weight of +3 to the high CSR/unintentional condition and - 1 to the remaining conditions. Panel D in Table 2 presents the results of this planned contrast and shows a significant ordinal interaction ($F = 7.58, p = 0.007$, two-tailed).²¹ Consistent with guidance recommended by Guggenmos et al. (2018), we confirm that the residual between-cells variance not captured by this contrast is not significant ($F = 0.81, p =$

²¹ Contrast coding has higher statistical power than ANOVA without increasing Type 1 error, which is crucial when the hypothesized interaction is ordinal as in our case. By using a (3,-1,-1,-1) contrast coding scheme, we hypothesize that one cell differs significantly from the other three cells, or more precisely, that the mean of the investment assessment for the high CSR/unintentional condition is significantly higher than the average of the cell means of the three remaining cells (see Guggenmos et al., 2018, 229). We also conducted nonparametric Kruskal-Wallis and independent samples tests of significant differences for the three cells coded as -1 in our contrast coding. Both tests resulted in two-tailed p -values above 0.5, confirming a lack of significant differences between these three cells.

Table 2
Analysis of assessment of investment potential.

Panel A: Descriptive statistics - mean (SD)			
CSR Performance	Attribution of the misstatement		
	Unintentional	Intentional	Total
Average-performance	-0.64 (22.76) n = 28	-8.59 (26.04) n = 32	-4.88 (24.69) n = 60
High-performance	10.40 (26.62) n = 35	-3.28 (30.07) n = 29	4.20 (28.83) n = 64
Total	5.49 (25.39) n = 63	-6.07 (27.92) n = 61	-0.19 (27.18) n = 124

Panel B: Simple main effects of misstatement attribution				
	df	Contrast value	t-statistic	p-value ^a
Unintentional condition				
High CSR vs. Average CSR	120	11.04	1.64	0.052
Intentional condition				
High CSR vs. Average CSR	120	5.32	0.78	0.218

Panel C: ANOVA model of assessment of investment potential					
	df	Sum of Squares	Mean Square	F	p-value ^a
CSR	1	2058.74	2058.74	2.93	0.045
Misstate	1	3597.31	3597.31	5.11	0.013
CSR*Misstate	1	252.08	252.08	0.40	0.276
Error	120	84,416.34	703.47		

Panel D: Contrast-coded analysis of variance					
	df	Sum of squares	Mean square	F	p-value ^b
Contrast	1	5328.59	5328.59	7.58	0.007
Residual between-cells variance	2	1138.42	569.21	0.81	0.448
Total between-cells variance	3	6467.01	2155.67	3.06	0.031
Error	120	84,416.34	703.47		

Panel E: Effect size metrics	
r	0.90
Proportion of between-cells variance explained by the contrast (r^2)	0.81
Proportion of between-cells variance not explained by the contrast (q^2)	0.19
Power Loss Index - proportion of statistical power relative to an equal-n design	1.08

Table 2 reports participants' assessments of the company's investment potential. Participants responded to the statement "Investment in XYZ at its current price provides an opportunity for strong financial returns" on a scale from -50 (Strongly disagree) to +50 (Strongly agree). The independent variables are CSR report and underlying misstatement. Participants received a CSR report indicating that the company was either an industry leader (High) or average within the industry (Average). Participants also received information that the underlying misstatement that led to a restatement was caused by either the misapplication of a new, complex accounting standard (Unintentional) or that management was accused of preparing false financial information to keep the stock price high (Intentional). Contrast weights are as follows: High-performance CSR/Unintentional misstatement (+3), High-performance CSR/Intentional misstatement (-1), Average-performance CSR/Unintentional misstatement (-1), Average-performance CSR/Intentional misstatement (-1).

^a One-tailed.
^b Two-tailed.

0.45, two-tailed; see Panel D) and note that the contrast explains 81.3% of the between-cells variance (see Panel E). Thus, following a restatement, non-professional investors continue to assess higher investment potential for high-performing CSR than average-performing CSR companies, but only when the misstatement is unintentional. This is consistent with H3.

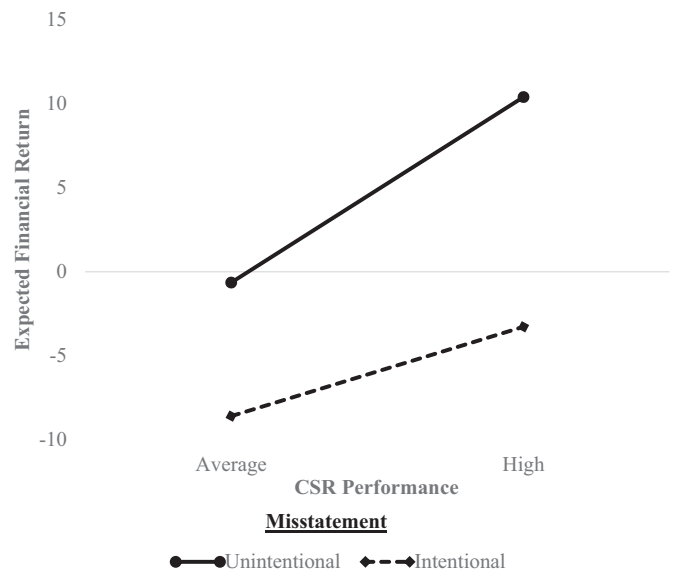


Fig. 3. Participant mean responses for assessment of investment potential. Participants provided an assessment for the statement "Investment in XYZ at its current price provides an opportunity for strong financial returns" on a scale from -50 (Strongly disagree) to +50 (Strongly agree). Participants received a CSR report indicating that the company was either an industry leader (High) or average within the industry (Average). Participants received information that the underlying misstatement that led to a restatement was caused by either the misapplication of a new, complex accounting standard (Unintentional) or that management was accused of preparing false financial information to keep the stock price high (Intentional).

4.5. Mediating effects of post-restatement warmth and competence

We next analyze non-professional investors' perceptions of warmth and competence following a restatement. We calculate those perceptions as the initial assessments of warmth and competence plus the post-restatement revisions of each. As shown in Table 3, participants continue to view high-performing CSR companies as significantly warmer and more competent than average-performing CSR companies (warmth: 32.91 vs. 9.52, $F = 21.95, p < 0.001$, one-tailed; competence: 28.78 vs. 15.02, $F = 8.25, p = 0.003$ one-tailed). We note no interaction for warmth ($F = 0.08, p = 0.776$, two-tailed) or competence ($F = 1.96, p = 0.164$, two-tailed). In addition, our tests of the simple main effects of misstatement on investor sentiment toward high-performing CSR companies (un-tabulated) suggest a significant difference between the two misstatement conditions for competence ($t = 3.07, p = 0.003$, two-tailed) but not for warmth ($t = 1.59, p = 0.118$, two-tailed). Collectively, these results indicate that CSR performance helps to preserve some positive sentiment of warmth, even after an intentional misstatement, but that benefit does not fully extend to the assessment of competence.

H4 predicts that investors' residual post-restatement warmth continues to mediate the relationship between CSR performance and assessment of investment potential. We follow the same approach when testing H2, using Model 4 of the PROCESS procedure with assessment of investment potential as the dependent variable, CSR performance as the independent variable, and post-restatement warmth as the mediator, as well as including misstatement as a covariate.²² Based on 20,000 bootstrap samples, the reported 95% confidence interval for the

²² Our inferences based on Model 4 and Model 6 analyses remain identical if instead of using misstatement as a covariate we divide our sample in two sub-samples (intentional vs. unintentional misstatement) and run these models separately for each of these sub-samples.

Table 3
Post-restatement warmth and competence.

Panel A: Post-Restatement warmth descriptive statistics - Mean (SD)			
CSR performance	Misstatement		
	Unintentional	Intentional	Total
Average-performance	16.50 (18.48) n = 28	3.41 (32.98) n = 32	9.52 (27.77) n = 60
High-performance	37.60 (24.62) n = 35	27.24 (27.63) n = 29	32.91 (26.33) n = 64
Total	28.22 (24.35) n = 63	14.74 (32.59) n = 61	21.59 (29.37) n = 124

Panel B: ANOVA model of post-restatement warmth					
	df	Sum of squares	Mean square	F	P-value ^a
CSR	1	15,529.84	15,529.84	21.95	<0.001
Misstate	1	4230.27	4230.27	5.98	0.008
CSR*Misstate	1	57.54	57.54	0.08	0.388
Error	120	84,914.43	707.62		

Panel C: Post-restatement competence descriptive statistics - mean (SD)			
CSR performance	Misstatement		
	Unintentional	Intentional	Total
Average-performance	17.96 (24.56) n = 28	12.44 (27.07) n = 32	15.02 (25.86) n = 60
High-performance	36.91 (22.97) n = 35	18.97 (23.64) n = 29	28.78 (24.78) n = 64
Total	28.49 (25.34) n = 63	15.54 (25.50) n = 61	22.12 (26.14) n = 124

Panel D: ANOVA model of post-restatement competence					
	df	Sum of squares	Mean square	F	p-value ^a
CSR	1	4992.59	4992.59	8.25	0.005
Misstate	1	4238.64	4238.64	7.01	0.009
CSR*Misstate	1	1186.80	1186.80	1.96	0.082
Error	120	72,596.55	604.97		

Table 3 reports the post-restatement warmth (competence) measured in three steps. First, participants rated their perceptions of XYZ's warmth (competence) prior to the restatement on a scale of -50 to $+50$, with endpoints of "More cold/unfriendly" ("More incompetent") to "More warm/friendly" ("More competent"). Following the restatement, participants were asked to rate how much their perceptions had changed using the same 101-point scale. We then calculated post-restatement levels of warmth and competence by adding these two data points together. Table 2 contains descriptions of the independent variables.

^a One-tailed.

unstandardized (standardized) indirect effect ranges from 2.83 (0.11) to 8.05 (0.30). Since both sets of numbers are located on the same side of the zero point, this procedure indicates that post-restatement warmth serves as a mediator between CSR activity and investment assessment (unstandardized indirect effect = 5.08; completely standardized indirect effect = 0.19). The two-tailed p -value of the traditional Sobel test is <0.001 .

We also run a serial mediation model (PROCESS Model 6) with warmth preceding competence as a mediator between CSR performance and assessment of investment potential. These results are presented in Fig. 4, Panel B. Only one mediation path is significant this time (see Fig. 4, Panel B): CSR→Warmth→Investor Judgment (the coefficient for the indirect effect = 3.89; the confidence interval does not include zero).

This evidence confirms that residual warmth continues to mediate the relationship between CSR and assessment of investment potential. Thus, we find support for H4.

We also note that the serial mediation path that was significant prior to the restatement (i.e., CSR→Warmth→Competence→Investor Judgment) is not significant after the restatement, which would be consistent with a reduction in the impact of the halo effect. In addition, the direct mediation path of residual competence on investor judgment (i.e., CSR→Competence→Investor Judgment) is not significant following the restatement. Collectively, these findings suggest that the affective component might play a bigger role in investor judgment following a restatement, though further investigation is necessary. Finally, we explore whether intentionality moderates the mediating effect of warmth (i.e., whether warmth mediates the relationship between CSR and assessment of investment potential in a similar manner for intentional and unintentional misstatements). The index of moderated mediation (untabulated) suggests a lack of moderating effect of intentionality on mediation (i.e., the confidence interval includes the zero point). In other words, although intentionality of a restatement does influence the revision of warmth as shown in Table 3, Panel B ($p = 0.008$), intentionality does not change the way warmth mediates the relationship between CSR and assessment of investment potential following the accounting misstatement (i.e., directly rather than through competence).

5. Conclusion

Global companies collectively spend billions of dollars on CSR activities every year (Meier and Cassar, 2018), and the consequences of CSR engagement interest a variety of stakeholders. We experimentally investigate the effects of CSR performance on non-professional investors' judgments following an accounting restatement and the psychological mechanisms behind these effects. We find that CSR performance shields a company from negative investor judgments following a restatement only when the restatement is attributed to an error (i.e., unintentional misstatement). When the restatement is attributed to potential managerial misconduct (i.e., intentional misstatement), there is no advantage of high CSR performance, which indicates limitations to the insurance effect.

We also document that feelings of warmth mediate the relationship between CSR performance and non-professional investor judgments both before and after a restatement; however, the manner of mediation differs between the two. Absent information about financial restatement, warmth affects non-professional investor judgment through competence, consistent with the Stereotype Content Model. Additionally, competence directly mediates the relationship between CSR and investor assessments of the company, consistent with the halo effect resulting from warmth. Following a restatement, however, both mediating effects of competence disappear, and warmth remains the only mediator between CSR performance and investor judgment. These results suggest that the affective component plays a bigger role in investor judgments following a restatement, consistent with an emerging compensation effect in these circumstances, and future research could provide further insights into the psychology related to CSR performance and investor judgments in these conditions.

Our study makes important contributions to the CSR literature, especially to the research on microfoundations of CSR (Gond et al., 2017; Rupp and Mallory, 2015; Shea and Hawn, 2019). Prior archival research documents extensive benefits to high-performing CSR companies due to various aspects of investor sentiment (e.g., Christensen, 2016; Dhaliwal et al., 2011; Naughton, Wang, and Yeung, 2019). However, evidence is lacking on the psychological mechanisms behind, and boundary conditions of, the insurance effect of high CSR performance. Because research is limited in these two areas, this paper provides important insights for scholars and the business community. We demonstrate that the benefits of CSR performance relate to investors'

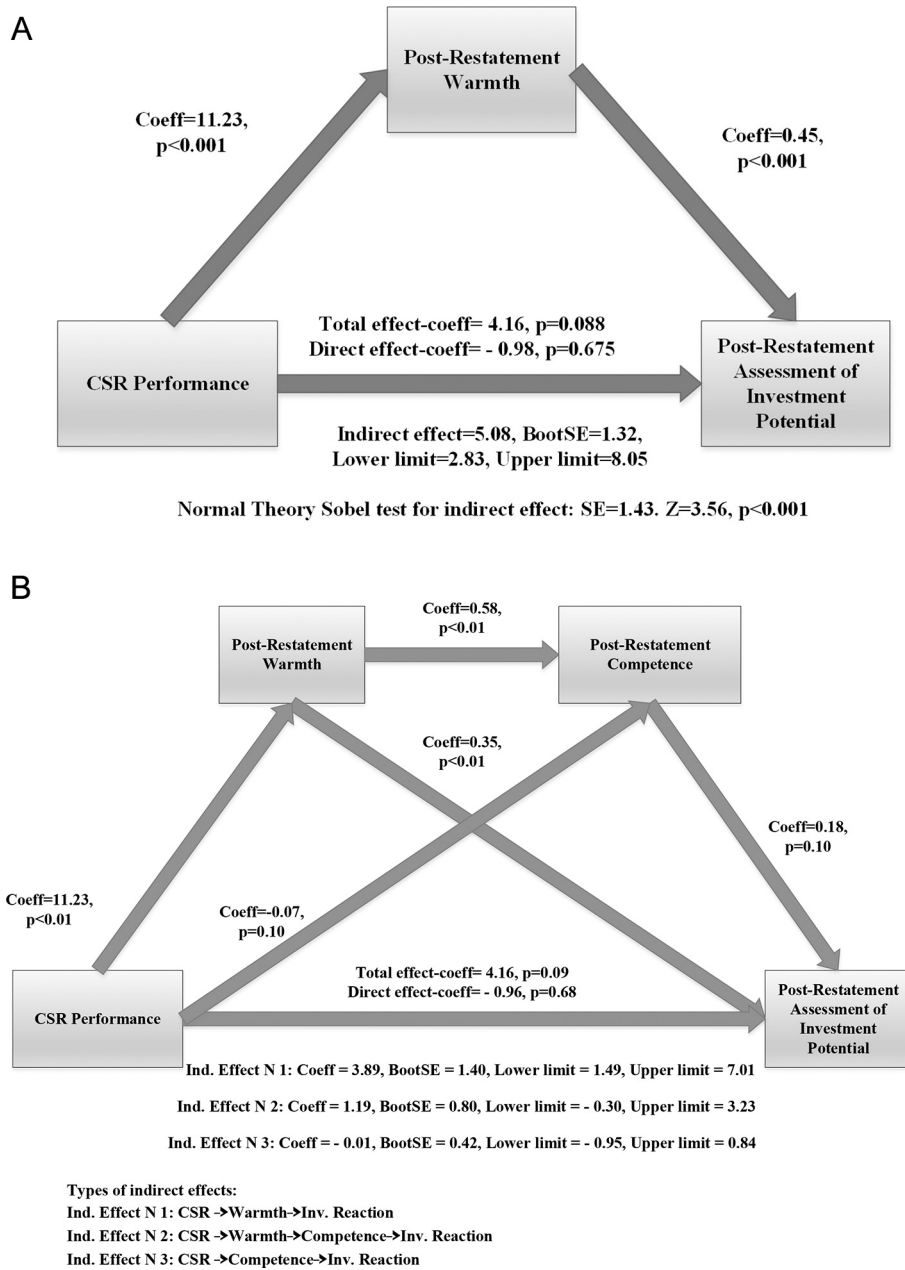


Fig. 4. Post-misstatement mediation models.
 Panel A: PROCESS procedure model 4 (single mediation). Sample size = 124. “Intentionality of Misstatement” is a covariate.
 Panel B: PROCESS procedure model 6 (serial mediation). Sample size = 124. “Intentionality of Misstatement” is a covariate.

judgments of warmth and competence and suggest that reputational advantages of high CSR performance may disappear when non-professional investors lose faith in a company, such as in the case of potential managerial misconduct.

This research is subject to the normal limitations of behavioral experimental research. We examine the decisions of non-professional investors, and the results may not apply to other users of CSR reports. Participants in our study received information about a single company, so complex situations may lead to different results. We operationalized CSR performance through community engagement and impact on the environment, and future research may examine whether the conclusions remain the same for other CSR activities. Overall, CSR scholars stress that CSR impact is sensitive to context, and environmental characteristics are important moderators of any such impact (Wang, Dou, and Jia,

2016). Therefore, we call on future research to examine whether our results hold for different contexts, such as an announcement of a material control weakness or other adverse financial reporting disclosures.

Declaration of Competing Interest

The authors declare that there is no conflict of interest related to the subject matter or materials discussed in this manuscript.

Data availability

The authors do not have permission to share data.

Appendix A

A.1. CSR experimental manipulations

Panel A: High CSR performance.

XYZ STORES

Sells discounted retail apparel, footwear, home decorations, jewelry and other accessories through its XYZ retail stores.

Overall Social Responsibility Rating:

87.3

(Industry Average: **57.1**)

Industry Rank:

3

(out of 56 Companies)

Selected Competitors	Overall Score
XYZ Stores	87.3
TJX	86.9
Kohls	79.4
Ross Stores	59.4
Sears Holdings	35.3
ABC Stores	24.6

Environmental Impact ★★★★★ (5 out of 5 stars)

XYZ Stores is an industry leader on environmental sustainability. The company has won awards for finding innovative ways to conserve water, land, and other natural resources.

Community Impact ★★★★★ (5 out of 5 stars)

XYZ Stores is an industry leader for providing a positive impact to the community. XYZ provides substantial donations to community programs designed to improve the lives of disadvantaged children, at-risk youth, and single parents.

Panel B: Average CSR performance.

XYZ STORES

Sells discounted retail apparel, footwear, home decorations, jewelry and other accessories through its XYZ retail stores.

Overall Social Responsibility Rating:

57.6

(Industry Average: **57.1**)

Industry Rank:

28

(out of 56 Companies)

Selected Competitors	Overall Score
XYZ Stores	57.6
TJX	86.9
Kohls	79.4
Ross Stores	59.4
Sears Holdings	35.3
ABC Stores	24.6

Environmental Impact ★★☆☆☆ (3 out of 5 stars)

XYZ Stores has an average impact on the environment and sustainability issues.

Community Impact ★★☆☆☆ (3 out of 5 stars)

XYZ Stores has an average impact on community issues.

Appendix B

B.1. Misstatement and CSR manipulation

Below is the news announcement included in the experimental materials. Portions of the announcement that differ among the cells have been bolded, italicized, and categorized (in brackets) below.

Headline: XYZ Announces the Restatement of 2016 Annual Results

April 2, 2017 – New York, NY

News Article

On March 29, 2017, XYZ Stores, Inc., which is **widely regarded as an industry leader in corporate social activity and [High-performance CSR]** operates approximately 300 discount department stores nationwide, issued a press release that caused a dramatic decrease in its stock price. XYZ told investors today that it overstated the value of its inventory from 2014 to 2016.

XYZ's restated net income is expected to drop by \$300 million. In the days following the disclosure of the accounting error, the company saw its stock price drop from \$24.12 per share on March 29 to \$17.43 today, a 27.7% fall in price.

Some big investors are accusing XYZ's top executives of intentionally misleading investors so that management could exercise their stock options. The Chief Financial Officer (CFO), Shawn Goodman, is accused of intentionally preparing false financial information to help keep the stock price high. The Securities and Exchange Commission (SEC) has opened an investigation regarding the misconduct. [Intentional Misstatement].

XYZ attributes the mistake to a recent change in a complex accounting rule. The Chief Financial Officer (CFO), Shawn Goodman, stated that the mistake was caused by complex accounting rules for inventory. XYZ accidentally misapplied a new accounting rule to these transactions. The Securities and Exchange Commission (SEC) found XYZ's response acceptable and has declined to open an investigation. [Unintentional Misstatement].

Carey Johnson, XYZ's president and CEO, is optimistic about the future. "XYZ has certainly suffered a substantial setback. We have a history of

integrity, *giving back to the community, and a good environmental record [High-performance CSR]*. Our company will resolve this problem and work hard to regain the trust of investors,” Johnson said in a statement.

Other people are not happy with the response. Tristan Salisbury, a community leader where XYZ is headquartered, said, “XYZ has disappointed investors, employees, and the community. I am not convinced that XYZ has sufficiently corrected these problems.”

Author note

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