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**Disclaiming the Future: Investigating the  
Impact of Cautionary Disclaimers on Investor  
Judgments Before and After Experiencing  
Economic Loss**

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**Disclaiming the Future: Investigating the Impact of Cautionary Disclaimers on Investor Judgments Before and After Experiencing Economic Loss**

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# Disclaiming the Future: Investigating the Impact of Cautionary Disclaimers on Investor Judgments Before and After Experiencing Economic Loss

## Abstract

We examine how cautionary disclaimers about forward-looking statements affect investor judgments both before making an investment and after having suffered an investment loss. In our first experiment, a cautionary disclaimer appears to effectively communicate to nonprofessional investors that forward-looking statements may not be reliable, but we find little evidence that the disclaimer alters the extent to which forward-looking statements influence nonprofessional investors' valuation judgments. In our second experiment, we shift our focus to *ex-post* judgments and find that the disclaimer influences the extent to which investors feel wronged and entitled to compensation after an investment loss, consistent with investors attending to the disclaimer and acting as if it were, *ex ante*, effective. Notably, investors continue to feel more wronged and entitled to financial compensation when available evidence suggests that management knowingly issued false or misleading forward-looking statements – even if disclaimed. Together, these results provide support for recent judicial efforts to erode the sweeping safe harbor provisions currently granted to companies.

**Keywords:** voluntary disclosure, forward-looking statements, cautionary language, safe harbor, investor judgments

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## I. INTRODUCTION

To what extent should managers be protected when the statements they have made about the future prospects of their firm turn out to be wrong? While there are numerous perspectives on this issue, firms in the U.S. have generally been granted at least some protection for the past several decades. For example, prior to the passage of the Private Securities Litigation Reform Act of 1995 (“the Reform Act”), firms were provided limited safe harbor for forward-looking statements that, *ex post*, turned out to be incorrect, as long as those statements had been made in good faith and on a reasonable basis. The Reform Act codified and significantly expanded protections against claims that forward-looking statements were misleading by providing an avenue for summary dismissal without consideration of whether managers acted with scienter.<sup>1</sup> Under the Reform Act, these types of claims can be summarily dismissed if forward-looking statements were identified as such and accompanied by meaningful cautionary statements. Indeed, by eliminating the need to consider scienter, the Reform Act has long been viewed by some as a license to lie. Yet there is little empirical evidence on whether cautionary disclaimers are effective warnings, and courts have begun eroding the sweeping protection offered by the Reform Act (Olazabal 2011). In this paper, we contribute to this ongoing debate by examining how nonprofessional investors react to cautionary disclaimers about forward-looking statements.<sup>2</sup>

We examine this issue from two perspectives. First, we examine whether cautionary disclaimers protect nonprofessional investors, *ex ante*, by reducing their reliance on positive

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<sup>1</sup> Scienter is a legal term that implies an actor had intent or knowledge of wrongdoing prior to an act.

<sup>2</sup> We focus on nonprofessional investors evaluating positive forward-looking statements because this has been a major focus of regulatory concern and oversight with respect to forward-looking statements. For example, the Wheat Commission’s Report stated “A real danger exists, in the Study’s judgment, that projections appearing in prospectuses and other documents filed under securities laws and reviewed by the Commission would be accorded a greater measure of validity by the unsophisticated than they would deserve” (SEC 1994).

forward-looking statements. If cautionary disclaimers make disclosure environments safer for investors, then regulators may want to continue to provide safe harbor to managers on the basis of these disclaimers and consider actions to stem recent judicial efforts to erode this path to safe harbor. In contrast, if cautionary disclaimers do not make disclosure environments safer for at least some investors, then regulatory reform (judicial or otherwise) may be appropriate.

Second, we examine whether cautionary disclaimers lead nonprofessional investors to believe they were adequately warned in the event of a loss. That is, *ex post*, cautionary disclaimers might reduce the extent to which investors believe firms are responsible for any economic loss incurred in the event that the positive forward-looking statements were ultimately not realized. This perspective recognizes that, regardless of the actual impact of a cautionary disclaimer *ex ante*, investors may believe that safe harbor is warranted if the forward-looking statements were made in good faith and/or if they were duly warned that the forward-looking statements were uncertain. Given the high frequency with which forward-looking statements are made, the significant protection afforded to firms granted safe harbor, and the significant legal liability companies face if denied safe harbor, it is important to understand whether cautionary disclaimers influence investors' reliance on positive forward-looking statements and alter the extent to which investors hold managers or firms responsible for related economic losses.

We use a series of experiments to examine these issues. In Experiment 1, participants read an earnings press release, provide a valuation judgment for the firm, and explicitly assess the extent to which they felt they could rely on the information they saw (hereafter "reliance assessment"). We manipulate two factors in a 2 x 2 between-participants design. First, to test the extent to which a cautionary disclaimer influences participants' reliance on positive forward-looking statements, we manipulate whether the earnings press release contains a cautionary

disclaimer. Second, because prior work in psychology and accounting suggests that the cautionary disclaimer may be insufficient, on its own, to reduce investors' reliance on positive forward-looking statements, we manipulate whether the explicit reliance assessment is made *before* or *after* participants provide their valuation judgment. This experimental design allows us to test whether a cautionary disclaimer, on its own or in conjunction with an explicit consideration of the reliability of the information in the disclosure, reduces investors' reliance on positive forward-looking statements.

Results from Experiment 1 indicate that the disclaimer *does* reduce participants' explicit reliance assessments, but *does not* decrease participants' valuation judgments. These results hold even when participants make their reliance assessments before providing valuation judgments. Taken together, these results suggest that nonprofessional investors (1) attend to the cautionary disclaimer, (2) process the disclaimer as a warning, and (3) believe that they should reduce their reliance on the information in the press release. Nevertheless, the disclaimer has little impact on the extent to which they incorporate information from positive forward-looking statements into their valuation judgments. Further, results from a supplemental experiment indicate that nonprofessional investors find forward-looking statements credible, consistent with regulatory concerns that investors may not adequately distinguish between the reliability of backward- and forward-looking statements. Taken together, our results suggest that cautionary disclaimers provide nonprofessional investors little protection from the economic harm that can result from undue reliance on forward-looking statements.

Given that cautionary disclaimers appear to provide limited protection to nonprofessional investors *ex ante*, we next shift our focus to examine how cautionary disclaimers influence nonprofessional investors' *ex post* perceptions after suffering an economic loss from relying on

inaccurate forward-looking statements. To do so, we conduct a second experiment in which participants read the press release from Experiment 1. Participants are then asked to assume that, based on that press release, they significantly increased their stock holdings in the company and incurred a substantial loss when the positive projected performance failed to materialize. We manipulate, in a 2 x 2 between-subjects design, (1) whether the press release contains a cautionary disclaimer and (2) whether available evidence suggests that, at the time management issued the press release, management believed that future performance was likely to improve (i.e., acted in good faith) or believed that future performance was likely to deteriorate and had actual knowledge that the positive projections in the press release were generally false or misleading (i.e., acted with scienter). We then measure the extent to which participants feel they have been wronged by management and/or the firm as well as the extent to which they believe management and/or the firm should be required to provide them with financial compensation for their losses.

Results from Experiment 2 show that cautionary disclaimers can reduce the extent to which participants feel they have been wronged and reduce the extent to which they believe they should be entitled to financial compensation for their losses, consistent with investors viewing disclaimers as at least somewhat effective. However, cautionary disclaimers *do not* eliminate participants' feelings that they have been more wronged and are more entitled to financial compensation when managers acted with scienter. That is, while nonprofessional investors believe that a cautionary disclaimer should provide some level of protection to managers and firms, they do not believe that managers who have acted with scienter should be given the same degree of safe harbor as managers who have acted in good faith – even if the forward-looking statements in question were disclaimed.

Our findings complement prior work that examines the role of cautionary disclaimers in building a safe harbor for forward-looking disclosures. Whereas prior work focuses primarily on firms' use of cautionary disclaimers and the effect of the Reform Act on firms' willingness to provide forward-looking disclosures (see, e.g., Johnson, Kasznik, and Nelson 2001; Nelson and Pritchard 2007), our findings shed light on the role of cautionary disclaimers from the investors' perspective and provide several insights that should be of interest to policymakers. Specifically, we find little evidence that cautionary disclaimers reduce participants' reliance on positive forward-looking statements when forming valuation judgments for the firm, suggesting that cautionary disclaimers are unlikely to fully mitigate economic harm resulting from undue reliance on forward-looking statements. Our findings also suggest that, because cautionary disclaimers do alert nonprofessional investors to the *ex ante* possibility that forward-looking statements may be unreliable, they can also decrease the extent to which nonprofessional investors view managers and firms, *ex post*, as being responsible for any economic loss the investors incurred. Nevertheless, in the eyes of these investors, cautionary disclaimers do not absolve managers or firms of responsibility when there is evidence of scienter.

Together, these findings indicate that nonprofessional investors believe cautionary disclaimers should provide managers and firms with a degree of safe harbor, but call into question the provision of this safe harbor when managers knowingly mislead investors. In addition, an important caveat is that, because cautionary disclaimers affect their explicit reliance assessments, nonprofessional investors may overestimate the protection provided by cautionary disclaimers. As such, rather than countering decreased litigation risk with increased investor protections, cautionary disclaimers seem to tilt the balance even further in the direction of decreased litigation risk for firms. Collectively, our set of findings on disclaimers provide

support for the recent erosion of safe harbor that has been occurring in courts, and together suggest that litigation reform may be needed to more effectively balance the needs of investors with protections afforded to firms.

## **II. BACKGROUND AND DEVELOPMENT OF HYPOTHESES**

### **Safe Harbors and Cautionary Disclaimers**

The safe harbor provisions enacted by the SEC in 1979 (and supported at the time by the judiciary Bespeaks Caution Doctrine) provided safe harbor for forward-looking statements if management made them in good faith and on a reasonable basis. These safe harbor provisions relied on the language of reasonable forward-looking statements to naturally induce a degree of caution among investors. Later, the provisions of Congress's Reform Act in 1995 mapped out a more explicit route toward safe harbor for disclosures containing forward-looking statements so long as management was willing to provide a disclaimer that included meaningful cautionary language identifying risk factors that could cause actual results to differ from projections. In doing so, the provisions of the Reform Act were part of a larger effort to encourage firms to provide forward-looking statements and to protect firms and managers from frivolous litigation while also balancing the need for investor protections (House of Representatives, Conference Report 1995).

The demand for forward-looking information reflects investors' and regulators' beliefs that this information improves decision-making in capital markets (PwC 2007; SEC 2003). That is, while the safe harbor provisions protect firms and managers from litigation, these protections have been made available because the forward-looking information is expected to benefit the capital markets. In the years following the passage of the Reform Act, firms became more willing to provide forward-looking statements (Johnson et al. 2001), and forward-looking

statements have been less likely to trigger securities litigation (Johnson, Nelson, and Pritchard 2007). In addition, while the Reform Act has not reduced the overall number of securities fraud class actions (Buckberg, Foster, Miller, and Plancich 2005; Perino 2003), a higher percentage of those actions are dismissed (Foster, Martin, Juneja, Dunbar, and Allen 1999). Yet, to date, there is surprisingly little empirical evidence on whether cautionary disclaimers protect investors or whether such protection is even needed.

### **Skepticism and Cautionary Disclaimers**

Forward-looking information is, by nature, uncertain and often unverifiable – even when made in good faith. By way of comparison, historical financial performance reporting is subject to compliance with U.S. GAAP, IFRS, or other national standards, and (for public companies) subject to an independent audit. In contrast, there is much less guidance over the content and form of forward-looking statements. Given the uncertainty inherent in forward-looking statements, some degree of caution is likely warranted and investors may naturally discount forward-looking information, particularly when forward-looking statements are positive in nature (e.g., Skinner 1994; Hutton, Miller, and Skinner 2003).

Despite these reasons to be skeptical of forward-looking statements, investors might fail to discount those statements – especially in the absence of a warning. Prior work in psychology finds that individuals are naturally credulous of information and that knowledge-based validation requires thoughtful and slow processes that occur only under specific conditions (e.g., Gilbert 1991; Gilbert, Tafarodi, and Malone 1993; Chen and Chaiken 1999; Petty and Wegener 1999). Related work in psychology and accounting indicates that people often fail to account for the reliability of information when making judgments and decisions, creating a tendency to over-rely on low quality information (e.g., Griffin and Tversky 1992; Bloomfield, Libby, and Nelson

2000, 2003; Nelson, Bloomfield, Hales, and Libby 2001). Moreover, prior research on the curse of knowledge indicates that individuals can have a difficult time discounting or ignoring information that they have already processed (Fischhoff 1977), even when they have incentives to do so (Camerer, Lowenstein, and Weber 1989).

If so, there may be a role for cautionary disclaimers because prior work suggests that simple prompts can sometimes help decision makers adopt a more analytic mindset and better account for the reliability of information. For example, priming individuals with words including analytic thinking words (e.g., “analyze,” “reason,” etc.) improves performance on analytic thinking tasks (Gervais and Norenzayan 2012). Relatedly, prior work in accounting suggests that auditors primed to adopt a more deliberative mindset are better able to identify material misstatements arising from unreasonable estimates (Griffith, Hammersley, Kadous, and Young 2015). In a similar vein, Koonce, Leitter, and White (2016) find that investors are more skeptical of firm disclosures when they are first informed that a recent *Wall Street Journal* article reported SEC concerns with management discretion over the clarity and content of company disclosures.

To the extent that a cautionary disclaimer helps nonprofessional investors recognize that positive forward-looking statements are somewhat unreliable, nonprofessional investors should issue lower reliance assessments and lower valuation judgments in response to a disclosure containing positive forward-looking statements when that disclosure includes a cautionary disclaimer.<sup>3</sup>

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<sup>3</sup> We focus on positive forward-looking statements because negative information from management is generally considered to be more credible than positive information (e.g., Skinner 1994; Hutton, Miller, and Skinner 2003). In addition, investors, as potential plaintiffs, would likely be more successful in demonstrating economic harm and loss causation, as is necessary under Rule 10b-5, when relying on positive statements that fail to materialize than if management were unduly pessimistic.

**H1:** Nonprofessional investors will issue lower reliance assessments when a disclosure containing positive forward-looking statements includes a cautionary disclaimer.

**H2:** Nonprofessional investors will issue lower valuation judgments when a disclosure containing positive forward-looking statements includes a cautionary disclaimer.

Finding support for H1 would provide evidence that nonprofessional investors attend to cautionary disclaimers and that, when explicitly prompted to consider their reliance on the information in a disclosure, a cautionary disclaimer can help nonprofessional investors recognize the inherent uncertainty of positive forward-looking statements. Finding support for H2 would provide evidence that a cautionary disclaimer can protect nonprofessional investors by reducing their actual reliance on positive forward-looking statements, thereby lending credence to the idea that safe harbor should be granted or denied to companies on the basis of a cautionary disclaimer. In contrast, failure to support H1 would cast doubt on the materiality of cautionary disclaimers in the eyes of nonprofessional investors, and failure to support H2 (regardless of support for H1) would call into question the appropriateness of granting or denying safe harbor on the basis of a cautionary disclaimer.<sup>4</sup>

### **Cautionary Disclaimers and Explicit Reliance Assessments**

If a cautionary disclaimer is insufficient, on its own, to help investors discount potentially unreliable forward-looking statements, investors may benefit from explicitly assessing their reliance on the information in a disclosure *prior* to making a valuation judgment. This type of explicit assessment might help investors to adjust the weight they place on management's

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<sup>4</sup> Importantly, while our directional prediction for H2 has solid theoretical underpinnings, we acknowledge that prior work suggests a strong credible null hypothesis. Most notably, Mercer, Palmiter, and Taha (2010) provide evidence that the standard mutual fund disclaimer about past performance is completely ineffective. However, they also find that investors' skepticism is heightened by a non-standard, one-sided, negative warning. *Ex ante*, it is unclear which of these results would be most likely to generalize to a setting with disclaimers about forward-looking statements.

positive forward-looking statements when issuing their valuation judgment. Consistent with this idea, prior work in psychology indicates that evaluating a specific component of a global judgment increases the influence of that specific information in the subsequent, more general judgment (Strack, Martin, and Schwarz 1988). Similarly, prior work in the accounting literature suggests that explicit assessments can sometimes play an important role in improving judgments. For example, auditors who explicitly assess fraud risks allocate more time to considering fraud cues and may allocate additional audit hours to address those fraud risks (Zimbelman 1997). Relatedly, explicit fraud risk assessments improve the effectiveness of analytical procedures in distinguishing between fraud and non-fraud firms (Knapp and Knapp 2001).

These findings suggest that explicitly assessing reliance before providing valuation judgments may help participants to more fully incorporate their perceptions of the press releases' reliability into their valuation judgments, particularly if the disclosure contains a cautionary disclaimer. If so, we would expect a cautionary disclaimer to reduce participants' valuation judgments to a greater extent when they assess reliance before making their valuation judgments.

**H3:** A cautionary disclaimer will reduce valuation judgments to a greater extent when nonprofessional investors make explicit reliance assessments *before* issuing a valuation judgment.

To the extent that a cautionary disclaimer does not reduce nonprofessional investors' valuation judgments (H2), evidence on H1 and H3 can collectively help distinguish between two potential explanations. First, a cautionary disclaimer might be sufficient to raise investors' awareness of the uncertain and unverifiable nature of forward-looking statements only when they are prompted to explicitly consider their reliance on the information in the disclosure. That is, without this type of explicit prompt, nonprofessional investors may fail to consider their reliance on forward-looking statements at the time they are making their valuation judgment even if the

press release contains a cautionary disclaimer. Alternatively, investors may suffer from a type of curse of knowledge when making their valuation judgments and simply be unable to effectively ignore or discount the information they have already encountered (Camerer, Lowenstein, and Weber 1989; Fischhoff 1997). In other words, even if nonprofessional investors believe they should significantly alter their reliance on forward-looking statements, they may be cognitively unable to adjust their valuations judgments after the fact when those valuation judgments have already been formed in the presence of information they later try to discount.<sup>5</sup>

In summary, if nonprofessional investors simply fail to consider their reliance when making their valuation judgments, explicitly prompting them to consider their reliance before their valuation judgments should help them to do so. If, however, nonprofessional investors consider reliance when making their valuation judgments but are unable to effectively ignore or discount the forward-looking information they have already encountered (a curse of knowledge), then prompting participants to explicitly assess their reliance before making valuation judgments will likely have little impact (Kennedy 1993, 1995).

### III. EXPERIMENT 1

#### Design

We test our hypotheses using a 2 x 2 between-subjects experimental design in which participants evaluate a fictitious cola company (“The Moore Cola Company”) after reading a firm disclosure.<sup>6</sup> The firm disclosure consists of an earnings press release indicating that the firm performed relatively poorly in the current quarter but that future performance is expected to

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<sup>5</sup> Distinguishing between these two process explanations for our results is important because it can inform investors how to protect themselves and inform policy makers about characteristics that might make disclaimers more effective. We discuss these implications and future research opportunities in more detail in Section V.

<sup>6</sup> The experiments in this study were approved by the Institutional Review Board (IRB) for Human Participants at the university where online administration of the study was completed.

improve (see Appendix A). As such, higher (lower) reliance on the forward-looking statements should lead to higher (lower) valuation judgments for the firm. Our design manipulates (1) the presence vs. absence of a cautionary disclaimer and (2) whether participants explicitly assess their reliance on the information in the press release *before* or *after* they issue a valuation judgment for the firm. To inform our choice about where to place the disclaimer within the press release, we examined the most recent press release for 100 firms randomly sampled from the S&P 500. The cautionary disclaimer appeared at the end of the press release for 96 of the firms and at the beginning of the press release for three firms.<sup>7</sup> We, therefore, placed the disclaimer at the end of the press release, consistent with common practice.

## Participants

Given our interest in understanding the efficacy of cautionary disclaimers, we focus our study on the judgments of nonprofessional investors because this class of investors is presumably most at risk of over-relying on positive forward-looking statements, absent some sort of regulatory intervention. Following several recent studies in accounting that study the judgments of nonprofessional investors (e.g., Dworkis 2012; Koonce, Miller and Winchel 2014; Rennekamp 2012; Jackson, Rowe and Zimbelman 2014), we recruited participants from Amazon's Mechanical Turk platform (AMT).<sup>8</sup> Recent archival research recruits participants from AMT and provides evidence that their perceptions of firms are positively associated with future market returns (even after controlling for traditional determinants of firm value)

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<sup>7</sup> One firm did not include a cautionary disclaimer in its most recent press release as the press release did not contain any forward-looking statements.

<sup>8</sup> Social scientists increasingly use AMT to recruit participants for studies because the participant pool is large, readily accessible, and at least as representative of the U.S. population as more traditional participant pools (for a review, see Mason and Suri 2012). AMT also provides a review and rating system that incentivizes Workers to pay attention to tasks (Ferrell, Grenier, and Leiby (2017). Importantly, a wide range of JDM findings have been replicated on AMT (Paolacci, Chandler, and Ipeiritos 2010; Horton, Rand, and Zeckhauser 2011; Krusche 2014).

(Blankespoor, Hendricks, and Miller 2017), suggesting that the perceptions of AMT participants are correlated with the views of a significant portion of the marketplace participants.

Since our task requires that participants be able to read and understand English and pay careful attention to the task, we recruited 241 participants from within the U.S. who had an approval rate of at least 95 percent. On average, our participants were 33.3 years old with 12.2 years of full-time work experience. Thirty-nine percent of our participants are female, and we paid each participant \$1.00 for completing the experiment. On average, participants completed the study in 8.275 minutes, earning an hourly rate of \$7.25.<sup>9</sup>

## Procedures

**Background Information and Initial Valuation.** We randomly assigned each participant to one of our four experimental conditions. The task began with participants first reading background information about The Moore Cola Company. We then elicited an initial judgment about the appropriate common stock valuation for the firm. More specifically, we asked participants to indicate on a 101-point scale what they believe to be an appropriate common stock valuation for the firm, ranging from 0 (“Low”) to 100 (“High”), similar to Koonce and Lipe (2010) and Rennekamp (2012).

**Press Release.** Next, we provided participants with a press release announcing earnings for The Moore Cola Company. Participants were encouraged to “take the time to thoroughly review the press release in order to answer the questions that [would] follow.” The press release was presented on a separate page, and the exact form of the press release depended on each participant’s treatment condition.

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<sup>9</sup> This wage rate is above the median hourly wage for AMT (Horton and Chilton 2010). Time spent on the study did not vary across the four conditions ( $F_{3,237} = 0.995$ ;  $p = 0.396$ , two-tailed).

**Revised Valuation and Reliance Assessment.** After they finished reviewing the press release, we asked participants to provide (1) a revised valuation judgment for the firm and (2) a direct assessment of the extent to which they felt they could rely on the information in the press release. We use the difference between participants' initial and final valuation judgments to capture how participants reacted to the information in the press release. For the reliance assessment, participants were asked to indicate on a 7-point scale the extent to which they agreed with the statement: "I felt like I could rely on the information in the press release" (1 = "Strongly Disagree"; 7 = "Strongly Agree"). While the change in participants' valuation judgments captures participants' actual reliance on the information in the press release, this second measure allows us to test whether a cautionary disclaimer affects participants' explicit beliefs about whether they should rely on the information in the press release (Rennekamp 2012).<sup>10</sup> The valuation judgment and reliance assessment are measured on separate pages and the order of the two measures was varied by condition.

## Results

H1 predicts that participants will issue lower reliance assessments when a disclosure containing positive forward-looking statements includes a cautionary disclaimer. Descriptive statistics of participants' reliance assessments (*Reliance*) are presented in Panel A of Table 1. As indicated in Panel B, we find that the presence of a cautionary disclaimer results in lower ratings of *Reliance* ( $p < 0.001$ , one-tailed).<sup>11</sup> These findings provide support for H1 and indicate that

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<sup>10</sup> By asking participants to assess their reliance on the disclosure as a whole, rather than just with respect to the forward-looking statements, we avoid prompting participants to specifically consider the reliability of forward-looking statements. Such a prompt would result in a less convincing test of the effect of the cautionary disclaimer on their reliance assessment by directing attention specifically to the forward-looking information.

<sup>11</sup> We use one-tailed tests for testing directional predictions and two-tailed tests otherwise.

participants attended to the cautionary disclaimer and were influenced by the disclaimer when providing explicit reliance assessments.

Table 2, Panel A presents descriptive statistics for the change in participants' valuation judgments (*Valuation Change*).<sup>12</sup> Notice that the valuation changes are negative on average, reflecting the firm's negative historical performance for the period. The forward-looking statements, however, are positive, such that observing lower valuation judgments when a disclaimer is present would provide evidence that the disclaimer decreases reliance on those statements. Consistent with this idea, H2 predicts that participants will issue lower valuation judgments when a disclosure containing positive forward-looking statements includes a cautionary disclaimer. However, as indicated in Panel B, we do not find support for H2, as there is no main effect of the cautionary disclaimer on *Valuation Change* ( $p = 0.630$ , two-tailed).

H3 predicts that the cautionary disclaimer will reduce valuation judgments to a greater extent when nonprofessional investors make explicit reliance assessments *before* issuing a valuation judgment. While the interaction between the cautionary disclaimer and the order in which we ask the dependent variable is marginally significant ( $p = 0.091$ , two-tailed), the overall pattern of results is not consistent with H3. Specifically, even when participants explicitly assess *Reliance* before making their valuation judgment, the cautionary disclaimer does not significantly decrease *Valuation Change* as predicted by H3 ( $p = 0.196$ , one-tailed) (see Panel C). In addition, we observe an unanticipated, nominally positive effect of the cautionary disclaimer when participants make their valuation judgments prior to explicitly assessing *Reliance* ( $p = 0.124$ , two-tailed). These two effects combine to produce the observed interactive effect. This interaction is only marginally significant and is not robust to using participants' final

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<sup>12</sup> Participants' initial valuation judgments do not differ across conditions ( $p = 0.192$ , two-tailed).

valuation judgments as the dependent variable and their initial valuation judgments as a control ( $F_{1, 236} = 1.52$ ;  $p = 0.219$ , two-tailed, untabulated).<sup>13</sup> Overall, we do not find support for H3.

Taken as a whole, our results suggest that, while a cautionary disclaimer clearly reduces participants' explicit reliance assessments, there is little evidence of a corresponding decrease in participants' valuation judgments – even when participants are prompted to explicitly assess *Reliance* before making their valuation judgments. Given this disconnect, we next examine potential explanations for our results.

[INSERT TABLE 1]

### ***Relation between Reliance and Valuation Judgments***

One possible explanation for observing little effect of a cautionary disclaimer on valuation judgments is that participants may not understand how their reliance assessments should translate into their valuation judgments. However, regressing *Valuation Change* on *Reliance* confirms that *Valuation Change* is increasing in *Reliance* ( $t_{236} = 2.40$ ;  $p = 0.017$ , two-tailed, not tabulated) and that this effect does not vary across conditions (all  $t_{233} \leq 0.84$ ; all  $p \geq 0.404$ , two-tailed, not tabulated). This result suggests that, regardless of condition, participants understand the theoretical relation between *Reliance* and *Valuation Change*. Overall, however, cautionary disclaimers do not appear to have a meaningful effect on participants' valuation judgments, even when they assess reliance prior to making valuation judgments. Thus, it appears that participants believe they should lower their valuation judgments in response to cautionary disclaimers, but have a difficult time doing so.<sup>14</sup>

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<sup>13</sup> All other inferences are unchanged if we use participants' final valuation judgments as the dependent variable and control for participants' initial valuation judgments.

<sup>14</sup> To provide additional evidence that nonprofessional investors believe they should reduce their valuation judgments in response to a cautionary disclaimer, we conducted a 1 x 2 within-subjects experiment in which participants viewed the disclosure without a cautionary disclaimer, provided a valuation judgment, viewed the

### ***Reliance on Forward-Looking Statements***

A second potential explanation of our results is that participants were already skeptical of the positive forward-looking statements – even in the absence of a cautionary disclaimer – such that their valuation judgments were not influenced by the positive forward-looking statements. This explanation seems unlikely given that the disclaimer reduced participants’ reliance assessments. However, to ensure that this is not the case, we conducted a supplemental experiment in which 81 participants, recruited from Amazon Mechanical Turk, read one of two versions of the earnings press release used in Experiment 1:

- Condition 1 (no forward-looking statements): The press release contained only historical performance reporting and backward-looking statements.
- Condition 2 (forward-looking statements, no disclaimer): The press release contained the same information as the press release in the first condition, but also included positive forward-looking statements.

In all conditions, participants made an initial and final valuation judgment, followed by a reliance assessment. Thus, comparing conditions 1 and 2 provides a test of the effect of the forward-looking statements on participants’ valuation judgments and reliance assessments.

Results of this supplemental experiment (untabulated) indicate that *Valuation Change* is lower when participants viewed the press release without the positive forward-looking statements (mean = -10.28) than when participants read a press release that did contain the positive forward-looking statements (mean = -5.92) ( $F_{1,79} = 2.68$ ;  $p = 0.053$ , one-tailed). In addition, the forward-looking statements, on their own, have no impact on participants’ reliance

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cautionary disclaimer, and then were given an opportunity to again revise their valuation judgment. We find that, after reading the cautionary disclaimer, participants significantly revised their valuations downward, on average ( $t = -4.05$ ;  $p < 0.001$ , not tabulated). Like any within-subjects test, this finding is subject to a potential demand effect. However, the effect of the disclaimer is stronger for those participants who responded the most positively to the press release ( $t_{100} = 1.64$ ;  $p = 0.052$ , one-tailed), consistent with the disclaimer serving as an effective intervention rather than it causing a simple demand effect. Overall, we conclude that reading the cautionary disclaimer *after* providing a valuation judgement led participants, on average, to reconsider whether they had placed too much weight on management’s positive forward-looking statements.

assessments (mean = 5.40 and 5.24, respectively) ( $F_{1, 79} = 0.43$ ;  $p = 0.514$ , two-tailed).<sup>15</sup> Taken together, these two results suggest that participants find the positive forward-looking statements credible, consistent with regulatory concerns that investors may not sufficiently distinguish between the reliability of backward- and forward-looking statements.

## Discussion

Combined, these results provide several important insights. First, in the absence of a cautionary disclaimer, nonprofessional investors are largely credulous of positive forward-looking statements, as positive forward-looking statements lead nonprofessional investors to issue higher valuation judgments and do not cause investors to decrease their explicit reliance assessments. Second, our findings suggest that nonprofessional investors attend to, rather than ignore, cautionary disclaimers in firm disclosures that contain positive forward-looking statements. Third, these disclaimers lead to lower explicit reliance assessments, suggesting that these disclaimers are at least somewhat informative for nonprofessional investors. Fourth, disclaimers have little impact on investors' actual reliance on forward-looking statements when making valuation judgments. Consequently, these findings suggest that nonprofessional investors rely on positive forward-looking statements and that cautionary disclaimers provide (at best) limited protection against economic harm that would result if these positive forward-looking statements are ultimately not realized.

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<sup>15</sup> In a third condition, 40 participants viewed the same press release as the second condition, but with an accompanying cautionary disclaimer about forward-looking statements. Comparing this third condition to condition 2 provides a test of the effect of the cautionary disclaimer on participants' valuation judgments and reliance assessments (a partial replication of Experiment 1). As in Experiment 1, we find that a cautionary disclaimer has no impact on participants' valuation judgments (mean = -6.63) ( $F_{1, 118} = 0.07$ ;  $p = 0.399$ , one-tailed) but does reduce participants' reliance assessments (mean = 4.78) ( $F_{1, 118} = 3.36$ ;  $p = 0.035$ , one-tailed).

## IV. EXPERIMENT 2

### Background

Results from Experiment 1 suggest that cautionary disclaimers may do little to alter investors' behavior in a way that would protect them from relying too heavily on unreliable forward-looking statements. On its own, this finding challenges the merits of providing or denying safe harbor solely on the basis of cautionary disclaimers. However, results from Experiment 1 also suggest that participants believe that a cautionary disclaimer *should* reduce their reliance on positive forward-looking statements. This suggests the possibility that, *ex post*, investors may believe that they were duly warned and thus view safe harbor protections as being justified for firms that include disclaimers in their disclosures.<sup>16</sup>

While prior archival work suggests that forward-looking statements have been less likely to trigger securities litigation following the Reform Act (Johnson, Nelson, and Pritchard 2007), it remains unclear whether and when investors believe safe harbor is warranted.<sup>17</sup> In Experiment 2, we examine this question by testing the extent to which a cautionary disclaimer reduces the extent to which investors believe management and/or the firm is responsible for an economic loss that results from reliance on forward-looking statements that are ultimately not realized. By investigating the extent to which cautionary disclaimers effectively warn investors *ex ante* (Experiment 1) and the extent to which investors hold managers and firms responsible *ex post* (Experiment 2), our experiments provide empirical evidence relevant to the ongoing debate

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<sup>16</sup> These perceptions are important because they could influence investors' demand for forward-looking information and their support for safe harbor laws. That is, if investors believe that a cautionary disclaimer provides a reasonable warning, these beliefs could increase investors' demand for forward-looking information, increase their support for safe harbor laws, and reduce the likelihood of litigation.

<sup>17</sup> That is, one interpretation of the empirical result is that investors believe that securities litigation is unlikely to be successful even if they do not believe the safe harbor is warranted. However, another possibility is that forward-looking statements could be less likely to even trigger securities litigation because investors believe they have been duly warned and safe harbor is warranted.

about the merits of providing (or denying) safe harbor solely on the basis of having provided a cautionary disclaimer.

### **Theory and Hypotheses**

Under the Reform Act, firms are not liable for inaccurate forward-looking statements if (1) the forward-looking statement is identified as a forward-looking statement, and is accompanied by meaningful cautionary statements identifying important factors that could cause actual results to differ materially from those in the forward-looking statement; or (2) the forward-looking statement is immaterial; or (3) the plaintiff fails to prove that the forward-looking statement was made by or with the approval of a firm representative who had actual knowledge that the statement was false or misleading. Importantly, these provisions are disjunctive in nature so that firms are absolved of legal liability if one or more of these provisions are satisfied. Thus, when material forward-looking statements turn out to be inaccurate, firms can receive safe harbor if the disclosure contained a cautionary disclaimer or if there is insufficient evidence that the firm acted with scienter.<sup>18</sup>

Prior work in psychology suggests that a variety of factors influence individuals' assignment of responsibility for an adverse event. For example, they may consider whether a particular individual played a causal role in the event, whether the event was foreseeable, or whether an individual intended for the event to occur (Alicke 2000; Heider 1958). When investors incur a loss from relying on inaccurate forward-looking statements, investors are likely to assign some degree of responsibility to themselves as well as to managers because both parties

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<sup>18</sup> Most notably, as written, the Reform Act indicates that by including a cautionary disclaimer in a disclosure with forward-looking statements, firms can receive safe harbor without needing to consider whether the forward-looking statements were made with actual knowledge that the statements were false or misleading.

played a causal role in the investor's loss. Specifically, the loss could have been avoided if the firm had not issued the inaccurate forward-looking statement or if the investor did not rely on it.

If managers acted in good faith (i.e., without scienter), then investors are likely to hold managers and firms less responsible both because the event is more foreseeable – forward-looking statements are inherently uncertain – and because managers did not intend to cause economic harm. In contrast, if managers acted with scienter, then investors are likely to assign more responsibility to the firm, because scienter is less foreseeable and managers intended to mislead investors. Likewise, because cautionary disclaimers warn that forward-looking statements may not be reliable, cautionary disclaimers make potential losses more foreseeable to the investor, even if the warning is not heeded and the loss is not prevented. As a result, cautionary disclaimers may lead investors to hold managers and firms less responsible in the event of an economic loss.

- H4:** Nonprofessional investors hold management and/or the firm *more* responsible for losses when they relied on forward-looking statements that management knew were false or misleading.
- H5:** Nonprofessional investors hold management and/or the firm *less* responsible for losses when they relied on forward-looking statements that were accompanied by a cautionary disclaimer.

Despite our prediction in H5, there are at least two reasons we might not find that cautionary disclaimers reduce the extent to which investors hold managers and firms responsible when they suffer an economic loss after relying on inaccurate forward-looking statements. First, investors might already be willing to grant managers “the benefit of the doubt” when learning about bad news (e.g., Koonce, Williamson, and Winchel 2011). That is, in settings where responsibility assigned to managers and firms is already relatively low (e.g., when managers have acted in good faith), investors may view cautionary disclaimers as unnecessary, such that a

cautionary disclaimer might have little impact, *ex post*. Second, in settings where responsibility assigned to managers and firms is relatively high (e.g., when managers have acted with scienter), investors may view cautionary disclaimers as insufficient warnings, *ex post*, to merit safe harbor. In light of these possibilities, we make a directional prediction for H5 (a main effect), but do not predict, *ex ante*, whether the effect of the disclaimer will be stronger or weaker when managers have acted in good faith vs. when they have acted with scienter (an interaction). We also acknowledge that there is a strong credible null hypothesis both when managers have acted in good faith and when they have acted with scienter.

One of the more controversial aspects of the current safe harbor provisions is that managers who have acted with scienter can receive the same protection granted to managers who have acted in good faith, so long as they have disclaimed their misleading forward-looking statements. To address whether investors agree with this logic, we also examine whether, conditional on management having provided a cautionary disclaimer, investors continue to hold management more responsible for a loss if those managers acted with scienter rather than in good faith (i.e., a simple effect of scienter given a cautionary disclaimer). Given that cautionary disclaimers do not typically warn investors that managers may have knowingly issued false or misleading forward-looking statements, we expect evidence of scienter to increase the amount of responsibility investors assign to management even if the forward-looking statements were accompanied by a cautionary disclaimer. Accordingly, we make the following prediction:

**H6:** Nonprofessional investors hold management and/or the firm *more* responsible for losses when they relied on forward-looking statements that management knew were false or misleading – despite those statements having been disclaimed.

Together, H4, H5, and H6 have important policy implications. From a regulatory standpoint, a cautionary disclaimer absolves managers and firms of legal liability for forward-

looking statements that are ultimately not realized, even if those statements were not made in good faith or on a reasonable basis. Support for H5 would provide evidence that nonprofessional investors believe some degree of safe harbor is warranted on the basis of a cautionary disclaimer. In contrast, support for H4 and H6 would call into question the provision of this safe harbor when managers knowingly issue false or misleading forward-looking statements.

## **Research Method**

### *Design and Procedures*

Participants in Experiment 2 read the same background information and earnings press release as in Experiment 1 (see Appendix A). Next, participants were asked to assume that, after reading the press release, they felt the company was undervalued and had significantly increased their stock holdings in the company. In addition, they were told that, after they increased their investment in the firm, the positive future performance projected in the press release failed to materialize. As a result, the stock price continued to decline causing them to incur a substantial loss on their investment.<sup>19</sup>

We manipulated, in a 2 x 2 between-subjects design, (1) whether a cautionary disclaimer was present in the earnings press release and (2) whether available evidence suggests that management had actual knowledge that the positive forward-looking statements were false or misleading (at the time the press release was issued). Participants in the Disclaimer Present condition viewed the press release with a cautionary disclaimer (see Appendix B) while participants in the Disclaimer Absent condition viewed the press release without a cautionary disclaimer. Participants in the No Scierter condition were asked to assume that “[available]

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<sup>19</sup> The use of a hypothetical scenario is a common technique used both in judgment and decision-making research and in accounting research (Libby, Bloomfield, and Nelson 2002). This approach is also consistent with prior work in psychology specifically examining how individuals respond to an incurred loss (e.g., Tversky and Kahneman 1981) and how individuals assess legal liability for wrongdoing (Sunstein et al. 1998).

evidence suggests that, at the time they issued the press release, management believed that future performance was likely to improve.” Participants in the Scierter condition were asked to assume that “[available] evidence suggests that, at the time they issued the press release, management believed that future performance was likely to deteriorate and had actual knowledge that the positive projections in the press release were generally false or misleading.”

Next, participants answer two questions that measure the extent to which participants hold management and/or the firm responsible for their economic loss. First, participants rated their agreement with the statement “I have been wronged by management and/or the firm” (*Wronged*). This measure captures the extent to which participants’ attribute the economic loss to management and/or the firm. Second, participants rated their agreement with the statement “Management and/or the firm should be required to provide me with financial compensation for my losses” (*Financial Compensation*). This measure captures the extent to which participants believe the firm should be financially liable for the economic loss. Because participants’ responses could potentially differ across these two measures (e.g., investors could believe that they were wronged by management without believing that they should be provided with financial compensation), we first test our hypotheses for each measure separately. However, because the attribution of a negative outcome is a theoretical antecedent to punishment and financial retribution (Weiner 1995; Kahneman, Schkade, and Sunstein 1998), we also provide a supplemental test of whether management intent and the cautionary disclaimer affect *Financial Compensation* through their effects on *Wronged*.

### ***Participants***

We recruited 200 individuals from Amazon’s Mechanical Turk platform. We again recruited participants within the U.S. who have an approval rate of at least 95 percent. On

average, our participants were 33.4 years old with 12.1 years of full-time work experience. Forty-one percent of our participants are female. We again paid each participant \$1.00 for completing the experiment. On average, participants completed the study in 5.804 minutes, earning an hourly rate of \$10.34.<sup>20</sup>

## Results

Table 3 presents descriptive statistics and reports statistical tests for participants' agreement with the statement "I have been wronged by management and/or the firm." H4 predicts that participants will hold managers and firms more responsible for their loss when the forward-looking statements were made with actual knowledge that they were false or misleading. As shown in Panel B, participants in the Scierter condition feel more *Wronged* ( $p < 0.001$ , one-tailed), providing support for H4. H5 predicts that participants will hold managers and firms less responsible for their loss when the forward-looking statements were accompanied by a cautionary disclaimer. Consistent with H5, the presence of a cautionary disclaimer in the press release decreases participants' assessments of *Wronged* ( $p = 0.008$ , one-tailed). There is also a marginally significant interaction between the disclaimer and scierter for *Wronged* ( $p = 0.089$ , two-tailed), indicating that scierter moderates the effect of a cautionary disclaimer on nonprofessional investors' assignment of responsibility.

The simple effects presented in Panel C indicate that the cautionary disclaimer decreases *Wronged* when there is evidence of scierter ( $p = 0.002$ , one-tailed), but not when management has acted in good faith ( $p = 0.307$ , one-tailed). This finding suggests that, when management has acted in good faith, nonprofessional investors view a cautionary disclaimer as unnecessary, consistent with the idea that participants understand (*ex post*) that forward-looking statements are

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<sup>20</sup> This wage rate is above the median hourly wage for AMT (Horton and Chilton 2010). Time spent on the study did not vary across the four conditions ( $F_{3,196} = 1.225$ ;  $p = 0.302$ , two-tailed).

inherently uncertain regardless of whether a cautionary disclaimer is present.<sup>21</sup> In contrast, evidence of scienter reliably increases *Wronged* both when a disclaimer is absent ( $p < 0.001$ , one-tailed) and when a disclaimer is present ( $p < 0.001$ , one-tailed). This latter effect provides support for H6, which predicts that, even in the presence of a cautionary disclaimer, nonprofessional investors will hold managers and firms more responsible for losses when they relied on forward-looking statements that management knew were false or misleading. Overall, these results indicate that a cautionary disclaimer can partially mitigate investors' assignment of responsibility when managers have acted with scienter. However, from the investors' perspective, the disclaimer does not eliminate the effect of scienter. This finding starkly contrasts the provisions of the Reform Act which completely absolve managers of legal liability on the basis of a cautionary disclaimer.

[INSERT TABLE 3]

We see largely similar support for H4, H5, and H6 when analyzing participants' agreement with the statement "Management and/or the firm should be required to provide me with financial compensation for my losses." As shown in Table 4, Panel B, participants in the Scienter condition feel more entitled to *Financial Compensation* ( $p < 0.001$ , one-tailed) and the presence of a cautionary disclaimer in the press release marginally decreases participants' assessments of *Financial Compensation* ( $p = 0.085$ , one-tailed), consistent with H4 and H5.<sup>22</sup> As indicated in Panel C, we also find that a cautionary disclaimer does not eliminate the effect of

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<sup>21</sup> Further, in the No Scienter condition, participants do not appear to hold management and/or the firm primarily responsible for their loss, as *Wronged* is below the midpoint of 4 ( $t_{100} = -5.24$ ;  $p < 0.001$ , two-tailed). This finding is consistent with investors offering the benefit of the doubt to managers who have acted in good faith (Koonce, Williamson, and Winchel 2011).

<sup>22</sup> As with *Wronged*, the evidence for *Financial Compensation* suggests that participants in the No Scienter condition do not hold management and/or the firm financially responsible for their loss (test of mean relative to midpoint:  $t_{100} = -9.52$ ;  $p < 0.001$ , two-tailed).

scienter on *Financial Compensation*, as evidence of scienter increases *Financial Compensation*, even when a disclaimer is present ( $p < 0.001$ , one-tailed), providing support for H6.<sup>23</sup>

[INSERT TABLE 4]

### Supplemental Analysis

As discussed previously, the attribution of a negative outcome is a theoretical antecedent to punishment and financial retribution (Weiner 1995; Kahneman, Schkade, and Sunstein 1998), suggesting that management intent and the cautionary disclaimer likely affect *Financial Compensation* through their effects on *Wronged*. As indicated in Figure 1, we find that scienter increases *Wronged* ( $z = 7.57$ ;  $p < 0.001$ , one-tailed), that the cautionary disclaimer reduces *Wronged* ( $z = -2.39$ ;  $p = 0.009$ , one-tailed), and that *Wronged*, in turn, increases *Financial Compensation* ( $z = 11.87$ ;  $p < 0.001$ , one-tailed). The indirect effects of both scienter and the cautionary disclaimer are significant using bias-corrected bootstrap intervals based on 5,000 bootstrap samples ( $z = 6.39$  and  $z = -2.34$ , respectively; both  $p \leq 0.010$ , one-tailed) (Hayes 2013).<sup>24</sup> Interestingly, after controlling for the effect of *Wronged*, scienter continues to increase *Financial Compensation* ( $z = 1.81$ ;  $p = 0.035$ , one-tailed). This latter finding provides evidence that, when managers knowingly mislead investors, participants support a punitive effect that goes beyond the extent to which they were wronged.

[INSERT FIGURE 1]

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<sup>23</sup> Despite the insignificant interaction ( $p = 0.503$ , two-tailed), Panel C also presents the remaining simple effects for completeness. The overall pattern of results is similar to the pattern of results for *Wronged*. Specifically, the disclaimer marginally decreases *Financial Compensation* when managers have acted with scienter ( $p = 0.076$ , one-tailed), but not when managers have acted in good faith ( $p = 0.309$ , one-tailed). Scienter reliably increases *Financial Compensation* both when a disclaimer is absent ( $p < 0.001$ , one-tailed) and present ( $p < 0.001$ , one-tailed).

<sup>24</sup> Similarly, a Sobel test indicates that the indirect effects of both scienter and the cautionary disclaimer are significant (both  $|z| \geq 2.37$ , both  $p \leq 0.010$ , one-tailed).

## **Discussion**

Under the Reform Act, firms can be absolved of legal liability for forward-looking statements that are accompanied by a cautionary disclaimer, even if they had actual knowledge that the forward-looking statements were false or misleading. Our results from Experiment 2 indicate that, when management has acted with scienter, investors interpret a cautionary disclaimer as a beneficial warning that reduces, but does not eliminate, firms' responsibility for knowingly making inaccurate forward-looking statements. However, when management has acted in good faith, investors view a cautionary disclaimer as largely unnecessary.

## **V. CONCLUSION**

Using a series of experiments, we examine the merits of granting safe harbor to firms on the basis of providing cautionary disclaimers. In Experiment 1, we find that, when an earnings press release contains a cautionary disclaimer about forward-looking statements, participants do not decrease their valuation judgments even though they believe they are less willing to rely on the information in the press release. We find similar results even when participants are prompted to explicitly assess their reliance on the press release before valuing the firm. In addition, results of a supplemental experiment indicate that, in the absence of a cautionary disclaimer, nonprofessional investors are largely credulous of positive forward-looking statements. When an earnings press release contains positive forward-looking statements, participants increase their valuation judgments and are no less willing to rely on the information in the press release. Together, these findings suggest that cautionary disclaimers are viewed by nonprofessional investors as informative warnings, but they have difficulty translating that belief into a change in how they view the prospects of the firm when making a valuation judgment.

Given that cautionary disclaimers appear to be treated *ex ante* as (largely unheeded) warnings, we use Experiment 2 to examine investors' perspective of the role of a cautionary disclaimer in absolving firms of responsibility for economic losses, *ex post*. Our results indicate that when a disclosure contains a cautionary disclaimer, participants assign less responsibility for economic losses that result from relying on inaccurate forward-looking statements. These findings provide empirical support for regulatory safe harbor provisions. However, our results also indicate that participants assign more responsibility to firms who *knowingly* issue false or misleading forward-looking statements, and, from the investors' perspective, a cautionary disclaimer does not absolve firms of responsibility for intentionally misleading investors. This result is inconsistent with the absolute protection provided under the Reform Act, which extends the regulatory safe harbor to firms when management had actual knowledge that their forward-looking statements are false or misleading.

Taken as a whole, our results address questions raised in the debate about whether cautionary disclaimers should be sufficient for firms to qualify for the safe harbor (e.g., Ripken 2005). When forward-looking statements are ultimately not realized, the success of a firm's motion to dismiss depends largely on its cautionary disclaimer. In contrast, our findings call into question the materiality of those disclaimers if they have a limited impact on investors' valuation judgments. In particular, our results call into question whether a cautionary disclaimer should also protect firms when their management has knowingly issued false or misleading forward-looking statements.

A limitation of our paper is that we focus on a subset of investor judgments – investors' and explicit reliance assessments (in Experiment 1) and their assignment of responsibility following a loss (in Experiment 2). Future work might examine how cautionary disclaimers

affect other investor judgments or behaviors (e.g., investor confidence, willingness to purchase shares, etc.). Future work might also examine whether cautionary disclaimers have a more material effect in other settings, with a different group of investors, or if better designed. Most notably, future work might examine how to increase the effectiveness of cautionary disclaimers or how nonprofessional investors might protect themselves from placing undue reliance on positive forward-looking statements. For example, investors might protect themselves by generating counter-explanations for why management's plans might fail, an intervention that effectively debiases curse of knowledge effects (Kennedy 1993, 1995) and reduces scenario-based optimism (Sedor 2002; Kadous, Krische, and Sedor 2006). Relatedly, Kadous, Krische, and Sedor (2006) find that even reading counter-explanations can effectively reduce scenario-based optimism. This finding should prove useful in designing cautionary disclaimers that protect nonprofessional investors. For example, cautionary disclaimers might be more effective if they contain less boilerplate language, are written in plain English, are presented more saliently, or are integrated within the disclosure so that they qualify specific forward-looking statements (rather than qualifying forward-looking statements more generally). We believe additional research in this area is both warranted and promising.

## APPENDIX A: PRESS RELEASE

*(Underlined portions are provided here to indicate forward-looking statements)*

**MIAMI, Florida -- February 15, 2014 --** The Moore Cola Company (NYSE: MCC) today reported second quarter and year-to-date 2013 results. Jonathan Clark, Chairman and Chief Executive Officer of The Moore Cola Company said, “Our second quarter volume results came in just below our expectations, reflecting an ongoing challenging global macroeconomic environment and unusually poor weather conditions in the quarter.”

CEO Jonathan Clark continued, “While we are not happy with our performance, we did gain global volume and value share in total nonalcoholic ready-to-drink beverages as well as in sparkling and still beverages in the quarter.”

CEO Jonathan Clark concluded, “Despite the headwinds in the quarter, we expect future improvement in our results, with current dynamics leading us to believe that our performance will be better in the second half of the fiscal year. We remain committed to our 2020 Vision and confident in our system's ability to execute with precision around the world. In this context, we remain firmly focused on investing alongside our global bottling partners to strengthen our system for the future, to deliver the brands and beverages that consumers love and to achieve our long-term performance goals.”

Volume growth in the quarter was below the Company's expectations due to a confluence of factors that collectively made for a challenging second quarter. Slow economies in Europe, Asia and Latin America, and historically wet and cold weather conditions across multiple regions impacted consumer spending and, consequently, overall industry performance. As we look ahead to the next several quarters, we continue to expect the industry and our business to be positively impacted by China’s expected economic growth. As a result of our efforts to evolve our strategies in China, we currently anticipate additional growth in our Asian business units in the second half of next year.

We are investing heavily in a new marketing initiative. These efforts are being led by marketing campaigns such as “Kiss a Can” in Europe and “Open Another” in North America. Fortunately, we expect that the creative excellence embodied by these marketing campaigns will have a noticeable impact on sales and profits worldwide in the near future.

Ready-to-drink tea volume grew 2% in the quarter, with steady performance of our brand across multiple markets worldwide. Packaged water volume grew 1% in the quarter, as we continue to focus on innovative and sustainable packaging. Energy drinks volume grew 4% in the quarter driven by growth across our global portfolio of energy brands. Juices and juice drinks volume declined 1% in the quarter. Overall, we expect the environment to show signs of improvement. The Company anticipates that performance will strengthen considerably as the year progresses.

## APPENDIX B: CAUTIONARY DISCLAIMERS ABOUT FORWARD-LOOKING STATEMENTS

### Disclaimer of Forward-Looking Statements

#### **Forward-Looking Statements**

*This press release may contain statements, estimates or projections that constitute forward-looking statements as defined under U.S. federal securities laws. Generally, the words believe, expect, intend, estimate, anticipate, project, will, and similar expressions identify forward-looking statements, which generally are not historical in nature. Forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from The Moore Cola Company's historical experience and our present expectations or projections.*

*You should not place undue reliance on forward-looking statements, which speak only as of the date they are made. The Moore Cola Company undertakes no obligation to publicly update or revise any forward-looking statements.*



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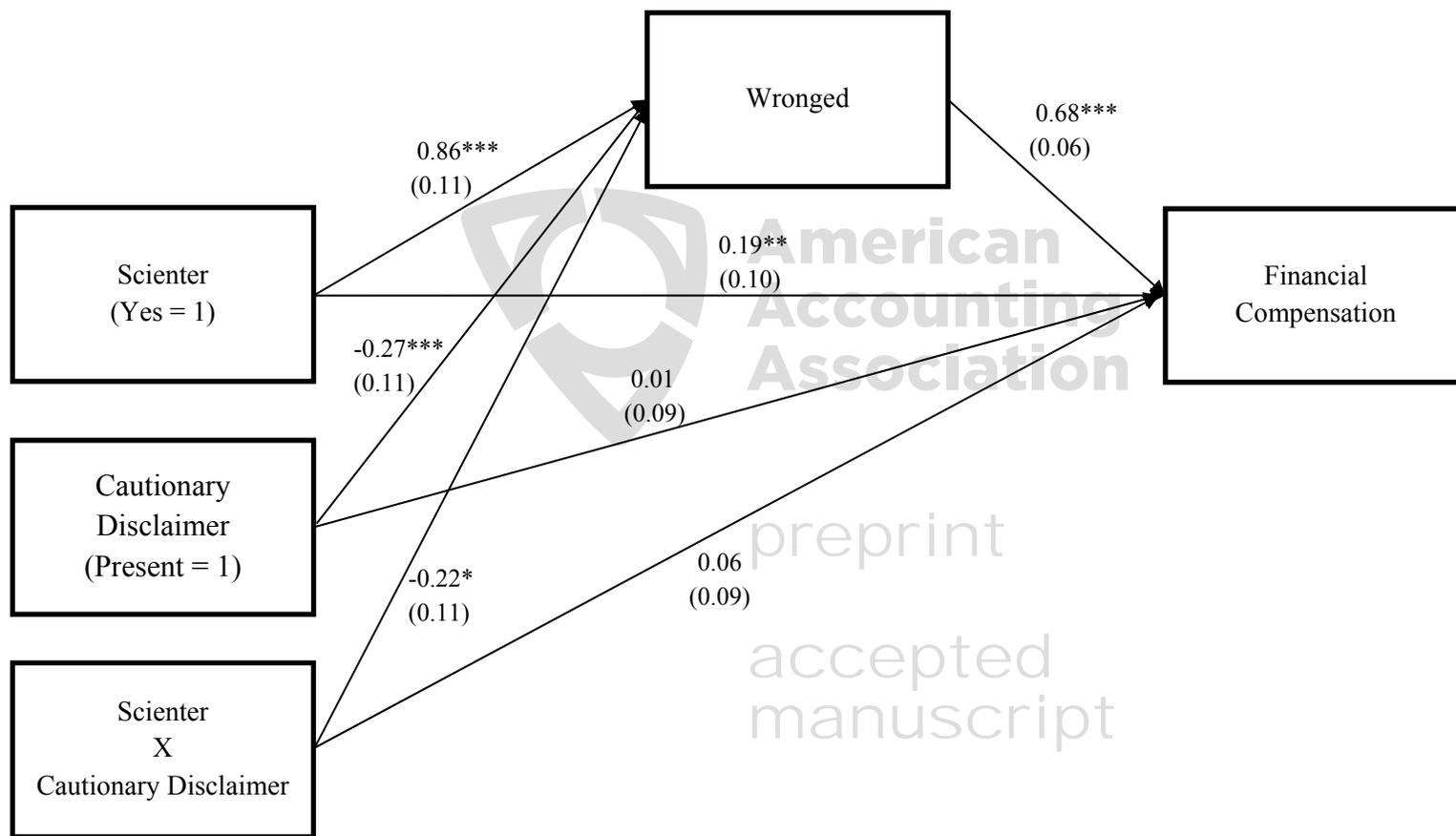
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FIGURE 1



This figure depicts regression coefficients and (standard errors) from a path analysis for Experiment 2. Experiment 2 examines the effects of management scientist and cautionary disclaimers on investors' perceptions that they have been wronged by management and whether management should be required to provide them with financial compensation for their losses. To measure participants' perceptions that they have been wronged, participants indicate their agreement with the statement "I have been wronged by management and/or the firm" (1 = "Strongly Disagree", 7 = "Strongly Agree"). To measure participants' perceptions of whether management or the firm should be required to provide them with financial compensation for their losses, participants indicate their agreement with the statement "Management and/or the firm should be required to provide me with financial compensation for my losses" (1 = "Strongly Disagree", 7 = "Strongly Agree"). Statistical significance (one-tailed) is indicated by \* ( $p \leq 0.10$ ), \*\* ( $p \leq 0.05$ ), and \*\*\* ( $p \leq 0.01$ ).



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**TABLE 1**  
**The Effect of Cautionary Disclaimers and Order of Dependent Variables on *Reliance***  
**(Experiment 1)**

**Panel A: Descriptive Statistics for *Reliance* – Mean, (Median), [Standard Error]**

Disclaimer	Order of Dependent Variables		
	Valuation First	Reliance First	Combined
Absent	5.26	5.46	5.36
	(5.0)	(6.0)	(6.0)
Present	[0.13]	[0.14]	[0.98]
	n = 61	n = 61	n = 122
Present	4.98	4.73	4.86
	(5.0)	(5.0)	(5.0)
Combined	[0.18]	[0.15]	[0.11]
	n = 60	n = 59	n = 119
Combined	5.12	5.10	5.11
	(5.0)	(5.0)	(5.0)
Combined	[0.11]	[0.11]	[0.08]
	n = 121	n = 120	n = 241

**Panel B: Analysis of Variance**

Source of Variation	SS	df	MS	F-stat	p-value	
Disclaimer	15.337	1	15.337	11.37	<0.001 <sup>†</sup>	H1
DV Order	0.050	1	0.050	0.04	0.847	
Disclaimer x DV Order	3.066	1	3.066	2.274	0.122	
Error	319.595	237	1.349			

<sup>†</sup> One-tailed equivalent.

This table presents results for Experiment 1, examining how participants' valuation judgments and reliance assessments (i.e., whether they felt they could rely on the information in the disclosure) are influenced by a cautionary disclaimer and by the order in which these two dependent variables are measured (valuation judgment first vs. reliance assessment first). To measure participants' valuation judgments, participants were asked to provide judgments on a 101-point scale about the appropriate valuation for the firm (0 = "Low" to 100 = "High") before and after receiving the press release. To measure reliance, we ask participants to indicate their agreement with the statement "I felt like I could rely on the information in the press release" (1 = "Strongly Disagree", 7 = "Strongly Agree"). Except as otherwise noted, p-values are non-directional.

**TABLE 2**  
**The Effect of Cautionary Disclaimers and Order of Dependent Variables on Valuation**  
**Judgments (Experiment 1)**

**Panel A: Descriptive Statistics for *Valuation Change* – Mean, (Median), [Standard Error]**

Disclaimer	Order of Dependent Variables		
	Valuation First	Reliance First	Combined
Absent	-8.77	-4.93	-6.85
	(-7.0)	(-7.0)	(-7.0)
	[1.79]	[1.74]	[1.25]
	n = 61	n = 61	n = 122
Present	-4.92	-7.08	-5.99
	(-7.0)	(-8.0)	(-7.0)
	[1.63]	[1.91]	[1.25]
	n = 60	n = 59	n = 119
Combined	-6.86	-5.99	-6.43
	(-7.0)	(-7.0)	(-7.0)
	[1.22]	[1.29]	(0.88)
	n = 121	n = 120	n = 241

**Panel B: Analysis of Variance**

Source of Variation	SS	df	MS	F-stat	p-value	
Disclaimer	43.702	1	43.702	0.23	0.630	H2
DV Order	41.899	1	41.899	0.22	0.638	
Disclaimer x DV Order	542.896	1	542.896	2.88	0.091	H3
Error	44627.684	237	188.302			

**Panel C: Simple Effects**

Source of Variation	df	F-stat	p-value
Effect of Disclaimer given Reliance Assessment First	1	0.74	0.196 <sup>†</sup>
Effect of Disclaimer given Valuation Judgment First	1	2.39	0.124

<sup>†</sup> One-tailed equivalent.

This table presents results for Experiment 1, examining how participants' valuation judgments and reliance assessments (i.e., whether they felt they could rely on the information in the disclosure) are influenced by a cautionary disclaimer and by the order in which these two dependent variables are measured (valuation judgment first vs. reliance assessment first). To measure participants' valuation judgments, participants were asked to provide judgments on a 101-point scale about the appropriate valuation for the firm (0 = "Low" to 100 = "High") before and after receiving the press release. To measure reliance, we ask participants to indicate their agreement with the statement "I felt like I could rely on the information in the press release" (1 = "Strongly Disagree", 7 = "Strongly Agree"). Except as otherwise noted, p-values are non-directional.



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**TABLE 3**

**The Effect of Cautionary Disclaimers and Scierter on Feeling Wronged by Management and/or the Firm (Experiment 2)**

**Panel A: Descriptive Statistics – Mean, (Median), [Standard Error]**

Disclaimer	Scierter		
	No	Yes	Combined
Absent	3.30	5.40	4.33
	(3.0)	(6.0)	(5.0)
	[0.24]	[0.25]	[0.20]
	n = 50	n = 48	n = 98
Present	3.14	4.45	3.79
	(3.0)	(5.0)	(4.0)
	[0.19]	[0.24]	[0.16]
	n = 51	n = 51	n = 102
Combined	3.22	4.91	4.06
	(3.0)	(5.0)	(4.0)
	[0.15]	[0.18]	[0.13]
	n = 101	n = 99	n = 200

**Panel B: Analysis of Variance**

Source of Variation	SS	df	MS	F-stat	p-value	
Scierter	145.225	1	145.225	55.52	<0.001 <sup>†</sup>	H4
Disclaimer	15.325	1	15.325	5.86	0.008 <sup>†</sup>	H5
Scierter x Disclaimer	7.641	1	7.641	2.92	0.089	
Error	512.646	196	2.616			

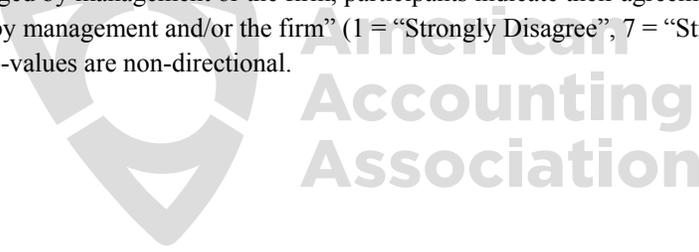
**Panel C: Simple Effects**

Source of Variation	df	Test Statistic	p-value	
No Scierter: No Disclaimer > Disclaimer	1	0.26	0.307 <sup>†</sup>	H5
Scierter: No Disclaimer > Disclaimer	1	8.44	0.002 <sup>†</sup>	H5
No Disclaimer: Scierter > No Scierter	1	41.13	<0.001 <sup>†</sup>	H4
Disclaimer: Scierter > No Scierter	1	16.83	<0.001 <sup>†</sup>	H4,H6

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<sup>†</sup> One-tailed equivalent.

This table presents results for Experiment 2, examining the effects of cautionary disclaimers and management scienter on investors' perceptions that they have been wronged by management or the firm. All participants read a press release containing positive forward-looking statements. Participants are then asked to assume that (1) after reading the press release, they significantly increased their stock holdings in the company and that (2) they incurred a substantial loss because the stock price declined when the positive future performance projected in the press release failed to materialize. We manipulate (1) whether the press release contained a cautionary disclaimer and (2) whether available evidence suggests that, at the time management issued the press release, management believed that future performance was likely to improve (i.e., acted in good faith) or believed that future performance was likely to deteriorate and had actual knowledge that the positive projections in the press release were generally false or misleading (i.e., acted with scienter). To measure participants' perceptions that they have been wronged by management or the firm, participants indicate their agreement with the statement "I have been wronged by management and/or the firm" (1 = "Strongly Disagree", 7 = "Strongly Agree"). Except as otherwise noted, p-values are non-directional.



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**TABLE 4**  
**The Effect of Cautionary Disclaimers and Scierter on Feeling Deserving of Financial Compensation from Management and/or the Firm (Experiment 2)**

**Panel A: Descriptive Statistics – Mean, (Median), [Standard Error]**

Disclaimer	Scierter		
	No	Yes	Combined
Absent	2.62	4.35	3.47
	(2.0)	(4.0)	(3.0)
	[0.21]	[0.26]	[0.19]
	n = 50	n = 48	n = 98
Present	2.45	3.86	3.16
	(2.0)	(4.0)	(2.0)
	[0.22]	[0.26]	[0.18]
	n = 51	n = 51	n = 102
Combined	3.22	4.10	3.31
	(3.0)	(4.0)	(3.0)
	[0.15]	[0.19]	[0.13]
	n = 101	n = 99	n = 200

**Panel B: Analysis of Variance**

Source of Variation	SS	df	MS	F-stat	p-value	
Scierter	123.635	1	123.635	42.86	<0.001 <sup>†</sup>	H4
Disclaimer	5.449	1	5.449	1.89	0.085 <sup>†</sup>	H5
Scierter x Disclaimer	1.298	1	1.298	0.45	0.503	
Error	565.426	196	2.885			

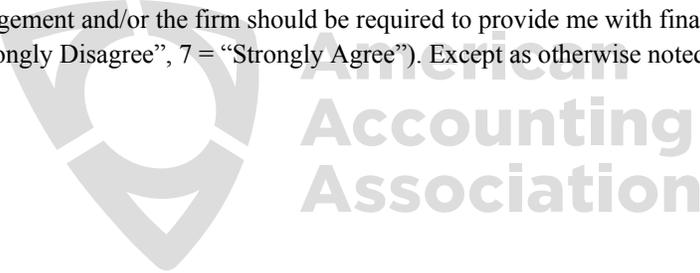
**Panel C: Simple Effects**

Source of Variation	df	Test Statistic	p-value	
No Scierter: No Disclaimer > Disclaimer	1	0.25	0.309 <sup>†</sup>	H5
Scierter: No Disclaimer > Disclaimer	1	2.07	0.076 <sup>†</sup>	H5
No Disclaimer: Scierter > No Scierter	1	25.53	<0.001 <sup>†</sup>	H4
Disclaimer: Scierter > No Scierter	1	17.62	<0.001 <sup>†</sup>	H4,H6

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† One-tailed equivalent.

This table presents results for Experiment 2, examining the effects of cautionary disclaimers and management scienter on investors' perceptions of whether management or the firm should be required to provide them with financial compensation for their losses. All participants read a press release containing positive forward-looking statements. Participants are then asked to assume that (1) after reading the press release, they significantly increased their stock holdings in the company and that (2) they incurred a substantial loss because the stock price declined when the positive future performance projected in the press release failed to materialize. We manipulate (1) whether the press release contained a cautionary disclaimer and (2) whether available evidence suggests that, at the time management issued the press release, management believed that future performance was likely to improve (i.e., acted in good faith) or believed that future performance was likely to deteriorate and had actual knowledge that the positive projections in the press release were generally false or misleading (i.e., acted with scienter). To measure participants' perceptions of whether management or the firm should be required to provide them with financial compensation for their losses, participants indicate their agreement with the statement "Management and/or the firm should be required to provide me with financial compensation for my losses" (1 = "Strongly Disagree", 7 = "Strongly Agree"). Except as otherwise noted, p-values are non-directional.



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