

## **The effects of negative incidents in sustainability reporting on investors’ judgments - An experimental study of third-party versus self-disclosure in the realm of sustainable development**

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### **Abstract**

This study examines how the disclosure of negative sustainability-related incidents impacts the investment-related judgments of decision makers. Participants in a sequential 2x2 between-subjects experiment first received a company’s financial information, prior to viewing additional sustainability information (by the company and by a non-governmental organization (NGO); with and without negative disclosure). Results indicate that self-reporting of negative incidents does not affect decision makers’ stock price estimates and investment decisions compared to judgments based on financial information only. However, third-party disclosure of these incidents by an NGO negatively affects these investment-related judgments. Furthermore, the magnitude of the NGO reporting effect depends on whether the company itself simultaneously reports these incidents. Thus, disclosing negative incidents in sustainability reporting could lose some of its apparent stigma. Instead of avoiding negative reporting altogether, managers might use it as a risk mitigation tool in their reporting strategy. The results also emphasize the power of the often-mentioned NGO-“watchdog” function.

### **Keywords**

Sustainability reporting, voluntary disclosure, negative incidents, investors’ judgments, non-governmental organizations, experiment, reporting strategy

**JEL:** C91, L31, M14, M41, M48

## Introduction

In recent years, sustainability reporting has gained increasing attention in business and academia (Fifka, 2011; Hahn and Kühnen, 2013). Especially corporations with a high visibility in terms of industry, size or otherwise seem to proactively disclose sustainability information (e.g., Amran and Haniffa, 2011, Haddock-Fraser and Fraser, 2008; Morhardt, 2010; Vormedal and Ruud, 2009). In this respect, it has been argued that voluntary disclosure of sustainability-related information is often used as an impression management tool (e.g., Hooghiemstra, 2000; Hopwood, 2009; Cho *et al.*, 2010) and that most of the information voluntarily disclosed in sustainability or corporate social responsibility (CSR) reports sheds a *positive* light on the reporting company (Lougee and Wallace, 2008; Holder-Webb *et al.*, 2009). However, potentially whitewashed sustainability reports raise doubts on the reliability, comparability, and materiality of the published information (Manetti and Becatti, 2009; Dhaliwal *et al.*, 2011). To overcome this drawback, the Global Reporting Initiative (GRI), introduced guidelines for sustainability disclosure (GRI, 2011) challenging companies to provide transparent, complete, and balanced reports. This explicitly includes positive *and* negative contributions.

While the benefits of a favorable sustainability performance and related reporting for the issuing company have been widely discussed in the literature (e.g., Carroll and Shabana, 2010; Dhaliwal *et al.*, 2011; Kurapatskie and Darnall, 2012), the effects of disclosing negative sustainability-related incidents have largely been neglected in scholarly research (Hahn and Kühnen, 2013; for notable exceptions see, e.g., Chan and Milne, 1999; Coram *et al.*, 2009). Against this background, this study explicitly focuses on investors’ reaction to the disclosure of *negative* incidents. The caveat of such a disclosure is that companies might risk their legitimacy and reputation by disclosing negative incidents (Chan and Milne, 1999; Deegan and Rankin, 1996). Given that sustainability aspects represent value-relevant information to investors (Orlitzky *et al.*, 2003; Dhaliwal *et al.*, 2012) and that investors are a key audience of sustainability reports (Spence, 2009), negative sustainability performance can thus translate into negative financial and stock market performance. However, signaling theory suggests that the negative effects can be mitigated to a certain extent if the addressees perceive the reporting of negative incidents as proactive (Blacconiere and Patten, 1994). Furthermore, additional players such as non-governmental organizations (NGOs) often adopt a watchdog role uncovering corporate misconduct and (supposedly) negative incidents that could also have devastating effects on

legitimacy and reputation and thus on shareholder value (see examples in Boele *et al.*, 2001; Grolin, 1998; Lund-Thomsen and Nadvi, 2010; Zadek, 2004). It is thus a worthwhile research aim, to shed light on the impact of companies’ sustainability reporting strategies *and* on respective independent third-party disclosure.

Our research approach is based on an experiment, using a 2 (company includes negative incidents in its sustainability reports or not)  $\times$  2 (independent NGO issues its own report on negative incidents or not) between-subjects design. In this experiment, subjects were asked to make a stock price assessment and indicate their willingness to invest in the company in light of financial information only and additional sustainability-related information including negative incidents. Interestingly and opposing the apparently dominant managers’ perception that disclosing negative incidents should be avoided (e.g., Lougee and Wallace, 2008; Holder-Webb *et al.*, 2009), our results indicate that disclosure of negative incidents by companies has no significant effect on the stock price estimates nor on the investment decisions compared to judgments based on the disclosure of financial information only. However, disclosure of negative incidents by an independent NGO does have a significant negative effect on these investment-related judgments. Furthermore, we find indications that the magnitude of the NGO’s reporting effect depends on whether the company itself simultaneously reports these incidents: The subjects in our experiment seem to punish the companies that were “caught off guard” by negative NGO reports (i.e., companies that do not publish negative incidents themselves but find themselves being accused of certain misconduct relating to sustainability issues).

Overall, our study advances the existing literature by discussing the impact of a truly transparent sustainability disclosure *including* negative incidents and by analyzing the shareholder value impact of company sustainability reports versus reporting by independent third parties. Our results help to overcome the apparent stigma that negative disclosure has in sustainability reporting strategies. Our findings thus have implications for sustainability and communication managers on how to deal with negative incidents in sustainability disclosure. Furthermore, this study could also influence the behavior of NGOs and their handling of corporate conduct and provide insights for players such as regulators or others (e.g., the GRI) in terms of framing voluntary and mandatory sustainability reporting requirements.

The remainder of this paper is structured as follows. In the following section, we provide an overview of negative incidents in sustainability reporting before outlining related theories and developing hypotheses. Then, we describe the experimental design and procedure. In the fifth section, we discuss the results and present additional analyses. Finally, we present conclusions and limitations and outline avenues for future research.

### **Negative Incidents in Sustainability Disclosures**

Most information disclosed in sustainability reports paints a positive picture of the reporting company (Lougee and Wallace, 2008; Holder-Webb *et al.*, 2009). It can be expected, however, that most (if not all) companies of a certain size also have to deal with certain negative aspects of corporate value creation on any of the three sustainability dimensions (economic, ecological, and social; Dyllick and Hockerts, 2002). Because we assume that the economic dimension is covered by traditional financial reporting, we do not focus on this aspect in the paper at hand. From an ecological perspective, negative aspects of corporate activities could stem, for example, from the use of depletable resources or harmful substances. From a social perspective, the alleged occurrence of events such as mistreatment of employees (e.g., discrimination or child labor) or fraud can be regarded as a negative incident.

Several studies on sustainability disclosure refer to different types of *mandatory* disclosure of negative incidents (e.g., Blacconiere and Patten, 1994; Freedman and Patten, 2004; Lorraine *et al.*, 2004; Shane and Spicer, 1983; Spicer, 1978; and partly Vormedal and Ruud, 2009). When it comes to *non-mandatory* sustainability reporting, however, only a few scholars specifically investigated disclosure of negative incidents. In the first step toward such issues, Coram *et al.* (2009) manipulated non-financial performance indicators in a balanced scorecard setting as positive or negative and concluded that these indicators have a significant effect on stock price estimates. Although this conclusion indicates that report users indeed use non-financial information, the indicators in the study were not related to sustainability or CSR but they did include such factors as customer satisfaction ratings and employee training. The study by Chan and Milne (1999) focused more specifically on environmental performance and disclosure. The authors found that investors react strongly and negatively to poor environmental performers, but that there is no significant reaction to the disclosure of good environmental performance. These

results point to the potential relevance of negative disclosure which is at the center of our study. However, both Chan and Milne (1999) and Coram *et al.* (2009) analyzed the effects of negative reporting by comparing an overall very positive report with an overall very negative report; the latter, especially, might be deemed unrealistic for voluntary sustainability reporting.

To overcome this limitation, we specifically investigate the impact of a truly transparent sustainability disclosure *including* negative incidents (see also Hahn and Lülfs, 2013).

Furthermore, we also consider the possibility of (simultaneous) reports by independent third parties. Apart from the company itself, other parties also frequently engage in disclosing negative information about specific firms. NGOs, for example, are frequently mentioned for their “watchdog” function, exposing supposedly bad corporate conduct or negative sustainability performance (e.g., Alstine, 2009; Kourula and Laasonen, 2010). The impact can be significant, as NGOs are often regarded as particularly credible and trusted sources of information (e.g., Edelman, 2012). Consequently, Cohen *et al.* (2011) indicate in their study that NGOs are among the preferred source for investors regarding CSR/sustainability information. Often, critical groups can rely on extensive networks of informants and make sophisticated use of social networks and mass communication tools to increase the pressure on companies to act responsibly, transparently, and accountably (Hahn, 2011).

### **Theory and Hypotheses**

Among the theories that have been used to explain different aspects of voluntary sustainability disclosure, legitimacy theory (e.g., Rusinko, 2010; Amran and Haniffa, 2011), decision usefulness theory (e.g., Staubus, 2000), and signaling theory (e.g., Campbell *et al.*, 2001) are most important for our analysis. In the following, we propose a brief overview of how these theories interact in the context of negative incident disclosure and derive falsifiable hypotheses.

We first refer to legitimacy theory, suggesting that any company needs to have legitimacy in the sense of a social “license to operate,” which is granted by society (Rusinko, 2010). Legitimacy, however, is potentially threatened by negative incidents if society perceives that a company is not operating in an acceptable way. In this context, the disclosure of sustainability-related information can be regarded as an instrument to shape the perceived legitimacy of the company

(Campbell *et al.*, 2003). Sustainability reporting thus represents a link between the legitimacy theory and the decision usefulness theory of accounting as our second theoretical cornerstone.

According to the decision usefulness theory, investors will react in the predicted direction when either positive or negative information is reported, given that this information is considered value relevant (Staubus, 2000; Holm and Rikhardsson, 2008). There is increasing evidence that sustainability aspects indeed represent value-relevant information to investors (Dhaliwal *et al.*, 2012). As such, investors should react to the disclosure of negative incidents in the predicted (i.e., negative) direction (Staubus, 2000). However, the disclosure of negative incidents in sustainability reports differs significantly from financial accounting disclosure, as negative sustainability aspects are much more heterogeneous and not always easily quantifiable (and often not directly pecuniary) compared to negative financial aspects (e.g., reduced earnings). To allow for a differentiated analysis, therefore, we integrate aspects of the signaling theory (e.g., Campbell *et al.*, 2001) in our framework. Signaling theory suggests that negative effects can be mitigated to a certain extent if the addressees perceive the reporting of negative incidents as proactive (Blacconiere and Patten, 1994). The disclosure of negative incidents might then be regarded as a *positive* signal in terms of actively managing risk, thus helping to avoid future issues. Consequently, instead of solely seeing the negative incident, decision makers might give credit to the company for dealing with the respective aspects (Yang, 2007). Finally, company self-disclosure of negative incidents is often accompanied by the mention of measures taken to overcome these issues; hence, the disclosing company could be regarded as being prepared to deal with the issues at hand. This type of disclosure could signal proactivity and awareness of risk, which is honored by investors, so that the negative disclosure is not classified as a “bad event,” or, as Yang (2007, p. 83) posits, “strategic communication means not to hide bad information but to disclose it in a way that is conducive to its solution.” In sum, we do not expect a negative effect on the investment-related judgments of decision makers when a company self-reports negative incidents. In this case, we rather expect that decision makers will rely on the financial information only, and thus, propose the first hypothesis:

**H1:** Self-reporting of negative incidents by the company will not affect decision makers’ investment-related judgments compared to judgments based on the disclosure of financial information only.

Hypothesizing on the effects of third-party disclosure of negative sustainability-related incidents is rather straight-forward. Extending the legitimacy theory and the decision usefulness theory to reporting by an independent NGO, we expect a negative effect on the investment-related judgments of decision makers. Because no countervailing signaling effects can be expected, we hypothesize:

**H2:** Third-party reporting of negative incidents by an NGO will negatively affect decision makers’ investment-related judgments compared to judgments based on the disclosure of financial information only.

Thus far, we have not considered the possible *interaction* effects resulting from the reporting behavior of these two actors. According to legitimacy theory, uncovering otherwise withheld information on negative sustainability performance could harm the position of the company in society, thus threatening its operations (Deegan, 2002). It can thus be assumed that the unexpected uncovering of negative sustainability-related information by an independent NGO would lead to an even stronger backlash in public perception. Consistently, signaling theory also acknowledges that not disclosing something can be a signal in itself (Campbell *et al.*, 2001). Therefore, we suggest the following interaction effect:

**H3:** The magnitude of the effect of an NGO’s reporting of negative incidents depends on whether the company itself simultaneously reports negative incidents.

## **Method and Data**

### ***Experimental design and procedure***

We chose an experimental design for the present study. We aim at investigating how investors use sustainability information (Deegan, 2004) and incorporate this information into their judgment and decision-making process. In this context, experiments involve the use of simulated treatments in an artificial environment, thus allowing the temporal segregation of cause and effect as well as the exclusion of other extraneous factors (Siemsen, 2011). Specifically, we used a sequential 2 x 2 factorial between-subjects design with the four groups first receiving financial information (i.e. the earnings press release) and then viewing the company’s sustainability report

with or without negative incidents along with an NGO report or without this report. Figure 1 presents an overview of the experimental conditions.

*Insert Figure 1 here*

Figure 2 presents the flow of the experiment which was monitored by both authors. At the beginning, initial instructions were distributed and read to the participants who were randomly assigned to one of the four experimental conditions. After receiving the first part of the materials in an envelope, participants were asked to give an initial stock price assessment for a short-term and a long-term horizon and to make an investment decision (see Appendix B for an overview of the questions). In addition, they could provide comments on their judgments (also see Andersson and Hellman, 2007). Afterwards, the participants received a second envelope containing sustainability information with the specific content depending on the experimental condition as described below. After reading the material, the participants had the chance to revise their initial assessments. Furthermore, they were asked to rate Alphacorp’s sustainability performance and to indicate whether they consciously had incorporated sustainability information into their assessments. We thus measured both actual behavior and attitudes (also see Rikhardsson and Holm, 2008). Then the participants were advised to hand back all materials before they received a third and final envelope with the final questionnaire containing manipulation checks and demographic questions.

*Insert Figure 2 here*

### ***Study material***

In step 1, all participants received an identical annual earnings press release from a hypothetical firm (“Alphacorp”) in the information technology industry. The press release was modeled on actual reports from a real company listed on the NASDAQ. To prevent any prior knowledge of the company affecting the participants’ judgment, we disguised company’s identity (Holm and Rikhardsson, 2008). We chose to present a financially healthy company to examine the effects of negative incidents in sustainability reporting in a context free of negative financial connotations (also see Holm and Rikhardsson, 2008).

The press release followed the typical structure. In the first section, financial highlights (e.g. revenue and earnings per share) for the fourth quarter and full year 2011 were provided, followed by a brief management outlook on the financial year 2012. The second section started with a

narrative providing general information about the company and the industry in which the company operated. Next was a (graphical) comparison of the cumulative five-year total return between Alphacorp, the NASDAQ-100 index, the S&P 500 index and a peer group index. The third and final section of the earnings press release contained comparative financial statements (balance sheet, income statement, and statement of cash flows) for the financial years 2010-2011 (annual and fourth quarter data). The earnings press release was identical for all experimental conditions.

In step 2, the participants received a shortened sustainability report. Again, this report was modeled on an actual report from a NASDAQ-listed company. The first section was identical for all experimental conditions and provided a summary of the company’s code of conduct, as well as information on sustainability highlights, that is, “positive incidents,” for 2011. Next was a table giving information on the company’s suppliers, and the compliance of their practices and management systems in four areas relating to ethics. We manipulated this information within our experimental conditions (see Appendix A for an overview of sustainability information provided).

The two groups in the upper half of figure 1 received the (tabulated) reporting of negative incidents and corrective actions. The company reported negative incidents in three areas (underage labor, weekly working hours, and discriminatory practices), all occurring at the company’s supplier base since such aspects are regarded as typical sustainability-related issues of a company’s value chain responsibility (e.g., Phillips and Caldwell, 2005; International Organization for Standardization, 2010) in many industries with worldwide supply chains. Furthermore, issues of such (mal-)practices in worldwide supply chains are increasingly subject to debate in general society so that we assume the mentioned issues to be value-relevant information to investors. Thus, half of the subjects received a report including solely positive information on Alphacorp’s sustainability performance while the other half received a balanced report that—in line with the GRI guidelines—encompassed positive *and* negative information. This allowed us to test for the (incremental) effect of the additional disclosure of negative incidents by the company. The two groups in the left half of figure 1 received an independent industry report issued by a hypothetical NGO called Business Watch. This report listed the negative incidents that were labeled “questionable business conduct” in the experimental condition in which the company did not include negative incidents in their sustainability

reporting. For the experimental condition where the company reported on negative incidents, this section was labeled “self-reported incidents”.

Thus, in sum, we made manipulations only in terms of information provided on negative incidents. Here, however, we had to make slight adjustments in order to make sure that the participants regarded the material as a good proxy of real company data, thus ensuring realistic and serious evaluations. To achieve the necessary degree of realism, the self-reported negative incidents included mentioning of corrective actions which were (again) modeled according to the actual report of the same company which provided the sustainability-related information. Furthermore and also adding to the realism of our material, these corrective actions were included in the case where the NGO listed the self-reported incidents but excluded from the case where only the NGO reports on the negative incidents. We took this specific detail of our manipulation into account when interpreting the results.

All study materials (i.e. the earnings press release, all sustainability information, and the questionnaires) were pilot tested with a group of doctoral and graduate students who suggested some minor adjustments which were included into the final versions.

### ***Independent and dependent measures***

Our experimental design involves two manipulated (independent) variables. The first independent variable was the inclusion/exclusion of negative incidents in the company’s sustainability report. The second independent variable was the presence or absence of an NGO report on negative incidents. There are three dependent variables. The first two variables in our study are the participants’ short-term and long-term stock price revisions: In the first questionnaire, which was distributed after the participants had viewed only financial information, participants were given a \$72.00 stock price on the day preceding the release of the earnings press release. Participants were then asked whether they thought the stock price would increase, decrease or stay the same short-term and long-term. They were also asked to provide a percentage of the short-term and long-term increase or decrease. After receiving the additional sustainability information, participants were asked the same questions again in the second questionnaire, thus giving them the opportunity to revise their initial stock price judgments. We then computed the short-term percentage revision (REVISE1) and long-term percentage revision (REVISE2) in the stock price assessment from the sequence of stock price estimates as our first two dependent variables (also

see Hopkins, 1996; Brown-Liburd *et al.*, 2012).<sup>1</sup> We chose a revision measure because we focus on the incremental effect of negative incident reporting on investors’ judgments.<sup>2</sup> The percentage change measure allows standardizing the magnitude of the stock price change regardless of the initial stock price estimate. Furthermore, we decided to include short- *and* long-term revisions since prior research provided mixed evidence on the decision impact of different time horizons: Chan and Milne (1999), for example, observe that long-term decision horizons increase the impact of sustainability disclosures whereas Rikhardsson and Holm (2008) find more reliance on environmental information for the short-term horizon. Regarding the third independent variable, we follow the approach adopted by Elliott (2006) and asked participants to make an investment decision. In the first questionnaire, participants were advised to assume they already owned a perfectly diversified portfolio and had an additional \$5,000 to invest. Using an 11-point scale ranging from \$0 to \$5,000 marked in increments of \$500, participants were asked to indicate the amount they would be willing to invest in the company. After receiving the additional sustainability information, participants were asked the same question in the second questionnaire. Participants’ investment amount revision, in this case computed as an absolute revision, thus represents our third dependent variable (REVISE3). The results for this third dependent variable primarily serve as a robustness check for our analysis of the stock price revision.

### ***Participants***

We used graduate business students (M.Sc. in Business) enrolled in a business strategy course at a large German university (Elliott *et al.*, 2007), thus following prior experimental research on CSR disclosure (Chan and Milne, 1999; Rikhardsson and Holm, 2008). Prior literature stressed that student participants are a good proxy for reasonably informed non-professional investors (Elliott *et al.*, 2007). Over time, such non-professional (or retail) investors have become a significant element in U.S. and European equity markets (Cohen *et al.*, 2011). Furthermore, Libby *et al.* (2002) caution against the use of professional subjects unless it is necessary to

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<sup>1</sup> Specifically, we calculated the difference of participants’ stock price judgments before and after receiving the sustainability-related information and scaled the outcome by the initial estimates before receiving the sustainability information.

<sup>2</sup> We confirm our main results using an (absolute) dollar change measure as an alternative dependent variable and by performing a split plot (repeated measures) ANOVA. The repeated measure in this instance is the individual investor’s long and short-term stock price assessment and the investment amount, before and after receiving additional sustainability information, respectively.

achieve the research goal. We thus think that using student subjects provides a resource-efficient way to give us insights into investors’ sustainability-related judgment and decision making. However, we are aware that graduate students might not generalize to other decision-makers (also see Rikhardsson and Holm, 2008) which we will discuss later on.

The 143 students (62 male) participating in the experiment had taken on average 6.9 (median 6.0) courses related to accounting and/or finance. Sustainability and/or CSR related courses amount to an average of 1.6 (median 1.0) which can be assumed to be a more or less standard value for future managers and non-professional investors when looking at the contemporary status of sustainability education in business schools worldwide (e.g., Wu *et al.*, 2010). 24.5 percent of participants stated that they had purchased common stock or mutual funds over the previous five years. Sixty-six (46.2 percent) participants reported professional work experience (on average 1.2 years). Participants’ mean age was 24.7 years. Considering these characteristics, we viewed the participants as a good proxy for (non-professional) investors who are reasonably informed (also see Elliott *et al.*, 2007) and thus allow a stringent test of our hypotheses.<sup>3</sup>

## **Results and Findings**

### ***Descriptive statistics***

Data collected in the third post-experimental questionnaire allows for a manipulation check. We asked participants three related questions: whether they had received a company sustainability report issued by Alphacorp, whether the sustainability report explicitly mentioned negative incidents, and whether they had also received an industry report on sustainability issued by a NGO. Of the participants, 76.2 percent (109 out of 143) answered all three questions correctly.<sup>4</sup>

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<sup>3</sup> We checked for randomization imbalances in the demographic variables within our four experimental groups. ANOVA and additional non-parametric tests revealed no statistically significant differences as regards gender, age, coursework, personal investments, and work experience.

<sup>4</sup> Specifically, participants were given three statements on the inclusion of information (e.g. “The material included a so-called ‘Industry Report’ which was published by an independent NGO”). Participants answered by checking either “true” or “not true”. Excluding participants who did not pass the manipulation checks actually (marginally) increases the statistical significance of our results. However, as prior research indicates that sustainability reporting’s influence on investors’ judgment and decision-making works at least partly on a subconscious level (e.g., Elliott *et al.*, 2012), we decided to report results for the complete subject sample.

Descriptive statistics for participants’ stock price assessments and investment decisions before and after viewing sustainability-related information are tabulated in Table 1.

*Insert Table 1 here*

Table 2 reports descriptive statistics for our main variables of interest, that is, the short-term and long-term stock price assessment *revisions* (Panel A) and the investment amount *revisions* (Panel B) from viewing financial data only to viewing additional sustainability information. The “Company & NGO negative” condition indicates a change in the short-term (long-term) stock price assessment of -1.22 percent (-0.39 percent), the “Only company negative” condition of -1.59 percent (+1.29 percent), the “Only NGO negative” condition of -3.22 percent (-3.76 percent) and the “No negative” condition of +0.81 percent (+3.50 percent). Concerning the investment amount revision, the “Company & NGO negative” condition indicates a change of +\$152.78, the “Only company negative” condition of +\$29.41, the “Only NGO negative” condition of -\$418.92, and the “No negative” condition of +\$375.00. Descriptive statistics thus give the first indication that NGOs’ reporting on negative incidents might be an important factor for investors’ judgment revisions.

*Insert Table 2 here*

### ***Hypothesis Tests***

Table 3 presents the results of the analysis of variance.<sup>5</sup> We conducted a two-way ANOVA that examined the effect of the company’s and the NGO’s reporting of negative incidents on investors’ judgment revisions. In H1, we hypothesized that the reporting of negative incidents by the company itself would not negatively affect users’ stock price estimates. We find that participants’ short-term ( $F = 0.04$ ;  $p = 0.85$ ) and long-term stock price assessment revisions ( $F =$

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<sup>5</sup> As assessed by the Shapiro-Wilk test, the distributions of our dependent variables for the groups formed by the combination of the company’s and the NGO’s reporting of negative incidents do not violate normality. However, we also conducted a non-parametric analysis. Specifically, we calculated a two-way ANOVA based on ranked data. We used the Sheirer-Ray-Hare test, an extension of the Kruskal-Walis test. Consistent with the results of the parametric analysis, we find a significant main effect for NGO’s reporting of negative incidents ( $p < 0.01$ ) on participants’ long-term stock price revision and their investment amount revision. Also in line with the parametric analysis we find insignificant effects only for the company’s reporting on participants’ long-term stock price revision. We also find no significant effects on participants’ short-term stock price revision. Again consistent with the parametric analysis, we find a significant interaction effect ( $p < 0.01$ ) only for participants’ investment amount revision. Inconsistent with the parametric analysis, we also find a significant main effect for the company’s reporting of negative incidents on participants’ investment amount revision ( $p < 0.01$ ).

0.14;  $p = 0.71$ ) are indeed not significantly affected by the reporting of negative incidents by the company itself (see Table 3, Panels A and B). Analysis of the third independent variable shows the robustness of these primary results on the stock price assessment revisions: We find that participants’ revision of investment amounts is also unaffected ( $F = 0.48$ ;  $p = 0.49$ ) by the company’s reporting of negative incidents (see Table 3, Panel C). The results thus provide strong support for H1.

*Insert Table 3 here*

The second hypothesis posits that the reporting of negative incidents by an NGO will negatively affect users’ stock price estimates. We find that participants’ long-term ( $F = 8.47$ ,  $p = 0.004$ , two-tailed) stock price assessment revisions are indeed significantly affected by the NGO’s reporting of negative incidents (see Table 3, Panel B). Analysis of the third independent variable again points in the same direction: We find that participants’ revision of investment amounts is similarly affected ( $F = 4.20$ ,  $p = 0.04$ , two-tailed) by the NGO’s reporting of negative incidents (see Table 3, Panel C). Results for the short-term stock price assessment revisions are directionally consistent, but only marginally significant ( $F = 3.05$ ,  $p = 0.08$ , two-tailed). Overall, the results thus support H2.

In H3, we finally hypothesized that the magnitude of the effect of an NGO’s reporting of negative incidents depends on whether the company itself simultaneously reports these incidents. The lines in Figure 3 indicate that NGO’s reporting of negative incidents affects investors’ stock price revision more if the company itself does *not* include negative incidents in its sustainability report than when it does. We find that this interaction effect is significant for participants’ short-term stock price assessment revision ( $F = 4.39$ ;  $p = 0.04$ ) while being only marginally significant for participants’ long-term stock price assessment revision ( $F = 3.29$ ;  $p = 0.07$ ). Furthermore, we observe a significant interaction between the effects of the company’s and the NGO’s reporting of negative incidents on subjects’ investment amount revision ( $F = 7.86$ ,  $p = 0.01$ ). Results thus mostly support H3.

*Insert Figure 3 here*

We also examined participants’ self-insight by asking them to retrospectively report whether the additional sustainability information had affected their stock price assessments (for a similar approach see, e.g., Weitz and Wright, 1979; Elliott *et al.*, 2012). 39 participants (27.3 percent)

indicated that the additional sustainability information had not affected their stock price assessments. However, only 24 of the 39 participants (16.8 percent) did not revise their initial assessments. This means that 15 participants (10.9 percent) did revise their stock price assessments from viewing financial data only to viewing additional sustainability information, but they were not aware of this fact. For this (small) subgroup we thus observe an inconsistency between behavior and attitude.

## Discussion and Conclusion

This study examines the effects of disclosing negative incidents in corporate sustainability reports and by an independent third-party on decision-makers investment-related judgments. The participants in a 2 x 2 experimental design were asked to make a stock price assessment and indicate their willingness to invest in the company in light of the financial information only and then to make a revised estimate based on the manipulated factors.

Somewhat counterintuitive to apparently existing manager’s perception, but in line with our theory-derived expectations, the results indicate that disclosure of negative incidents by companies has no significant effect either on the stock price estimate (short-term and long-term) or on the investment decision (**H1**). This finding is important since companies so far predominantly display an avoidance behavior and tend to emphasize positive information in voluntary sustainability reporting (Lougee and Wallace, 2008; Holder-Webb *et al.*, 2009). Moreover, these findings contradict prior experimental research. The few experimental studies that covered negative reporting (Chan and Milne, 1999; Coram *et al.*, 2009) found a negative relationship to shareholder value. The subjects of our experiment, however, do not seem to regard disclosure of negative incidents as harmful per se for company value. A reason might be that in our experiment the participants were offered a *balanced* corporate report (covering positive *and* negative aspects) whereas prior experimental research covered negative reporting in a rather extreme way by focusing on *purely* negative information. Furthermore, the proactive disclosure of negative incidents might have even been regarded as a *positive* signal in terms of actively managing risk helping to avoid future issues, especially given that the disclosure was accompanied by the mentioning of measures taken to overcome these issues (Hahn and Lülfs, 2013). Hence, the disclosing company in our study could be regarded as being well-prepared to

deal with the issues at hand. In line with signaling theory (e.g., Campbell *et al.*, 2001), disclosure of this kind thus could signal proactivity and awareness of risks which is honored by investors.

Our other findings were more in line with “traditional” expectations. Participants significantly reacted to sustainability information provided by an NGO. Our behavioral findings thus complement the survey by Cohen *et al.* (2011) who reveal that third parties (e.g., NGOs) are investors’ preferred source for CSR/sustainability information. Specifically, in our experiment, the disclosure of negative incidents by an independent NGO has a significant negative effect on long-term stock price revisions and investment decisions (**H2**). In this respect, our results also support prior research indicating that especially long-term decision horizons seem to increase the impact of sustainability disclosures (Rikhardsson and Holm, 2008) as the effects for short-term stock price revisions are less pronounced in our experiment. We also find indications that the magnitude of the effect of an NGO’s reporting of negative incidents depends on whether the company itself simultaneously reports these incidents (**H3**). Our results suggest that investors seem to punish those companies that were “caught off guard” by negative NGO reports (i.e., those companies that do not publish negative incidents themselves but find themselves being accused of certain misconduct relating to sustainability issues. Our findings are thus in line with our proposed theoretical framework. Referring to signaling theory, not disclosing or concealing information might be regarded as a signal in itself (see also Campbell *et al.*, 2001; Bloomfield, 2002). Thus, one possible explanation for the strong negative stock price revisions in the “Only NGO negative” condition is that investors might “preventively” punish the company for other (potential) incidents that have not been uncovered (yet).<sup>6</sup> On the other hand, our results on the reporting of negative incidents by the company *and* an NGO suggests that the proactive disclosure preceding the NGO statement mitigates the potential risk of being negatively exposed and signals awareness and a proactive commitment to deal with the issues.

Several implications stem from this outcome. In general, disclosure of negative incidents in sustainability reporting could lose some of the apparent stigma if these incidents are part of an overall balanced sustainability report. Instead of avoiding negative reporting altogether, managers might use it as a kind of risk mitigation tool especially in cases where there is a risk of third

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<sup>6</sup> When interpreting the strong negative stock price revisions, we again have to consider the manipulations in our experimental materials: In the “Only NGO negative” condition, participants did (and could) not receive information on corrective actions due to the nature of such investigative NGO disclosure.

parties exposing the respective incident or corporate conduct. From an NGO perspective, our results emphasize the power of the often-mentioned “watchdog” function. Uncovering corporate misconduct can indeed hit companies at a sensible point: the share value. Lyon and Maxwell (2011, p. 29) found in their economic model “that activist auditing of corporate disclosure behavior is more likely to induce a firm to become more open and transparent if the firm is likely to have socially or environmentally damaging impacts.” The results of our experiment support this insight. However, NGOs might want to use this power carefully. Sustainability is a highly complex topic (e.g., Hahn, 2011), and it might be that even companies with proactive sustainability management are not aware of individual negative incidents in their value chain. However, publicly uncovering negative incidents in this case could have the effect that the respective firm is deterred from becoming even more accountable. In such cases, a more discreet use of the respective information could be sensible. Finally, other actors in sustainability reporting such as the GRI could use the results of our study as an argument to emphasize the importance of providing a true and fair view of sustainability performance in voluntary disclosure not only from a stakeholder point of view but also from a more company-centered perspective. However, an experimental study is not without limitations. Experiments inevitably involve an over-simplification of the real decision-making process since decision-makers are not gathering their own information (Chan and Milne, 1999). Further research could thus additionally focus on investors’ information-seeking behavior specifically regarding negative incidents. In terms of our study material, our manipulation included a subtle specific feature. For reasons discussed above, the negative information provided in the “Company & NGO negative” and “Only company negative” condition differed slightly from the “Only NGO negative” case since only the former included corrective action proposed by the company who uncovered the respective incidents (see Hahn and Lülfs, 2013, for this strategy). This could have had an impact on the results. We nevertheless purposefully chose this approach to avoid creating an unrealistic scenario which, in the worst case, could have triggered nonsense evaluations and answers by the participants. The results of our approach should thus provide more meaningful insight when looking at typical corporate and NGO reporting behavior, albeit at the cost of a partially blurred view on the triggers of our results. We factored this in by taking the specific nature of our manipulation into account when analyzing and discussing the data. Finally, we used graduate students of business as participants. Although this approach is common (e.g., Elliott *et al.*, 2007; Holm and

Rikhardsson, 2008), the results may not be generalizable to other groups of decision makers (Rikhardsson and Holm, 2008).

Future studies could try to overcome some of these limitations by complementing our study with different experimental designs (e.g., by using professional analysts as subjects or by investigating investors’ reaction to other kinds of negative disclosure). Furthermore, by concentrating on potential investors and share-price issues we discussed the impact of sustainability disclosure from a shareholder value perspective (see, e.g., Moser and Martin, 2012; Deegan, 2004). When shifting to a stakeholder perspective and to a more holistic perspective of information demand, investigating how negative disclosure impacts other stakeholders’ perception would be interesting. Finally, different levels of stakeholder orientation in different countries (Williams and Aguilera, 2008) could also affect the value perception in light of negative disclosure; thus, future studies could be conducted in countries with different cultural and social norms.

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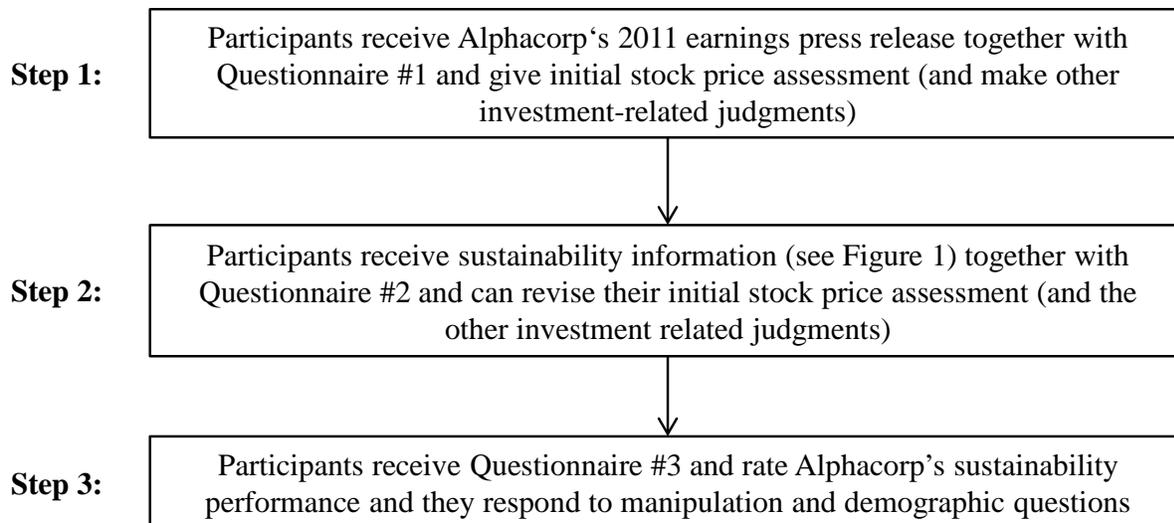
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### Figures and Tables

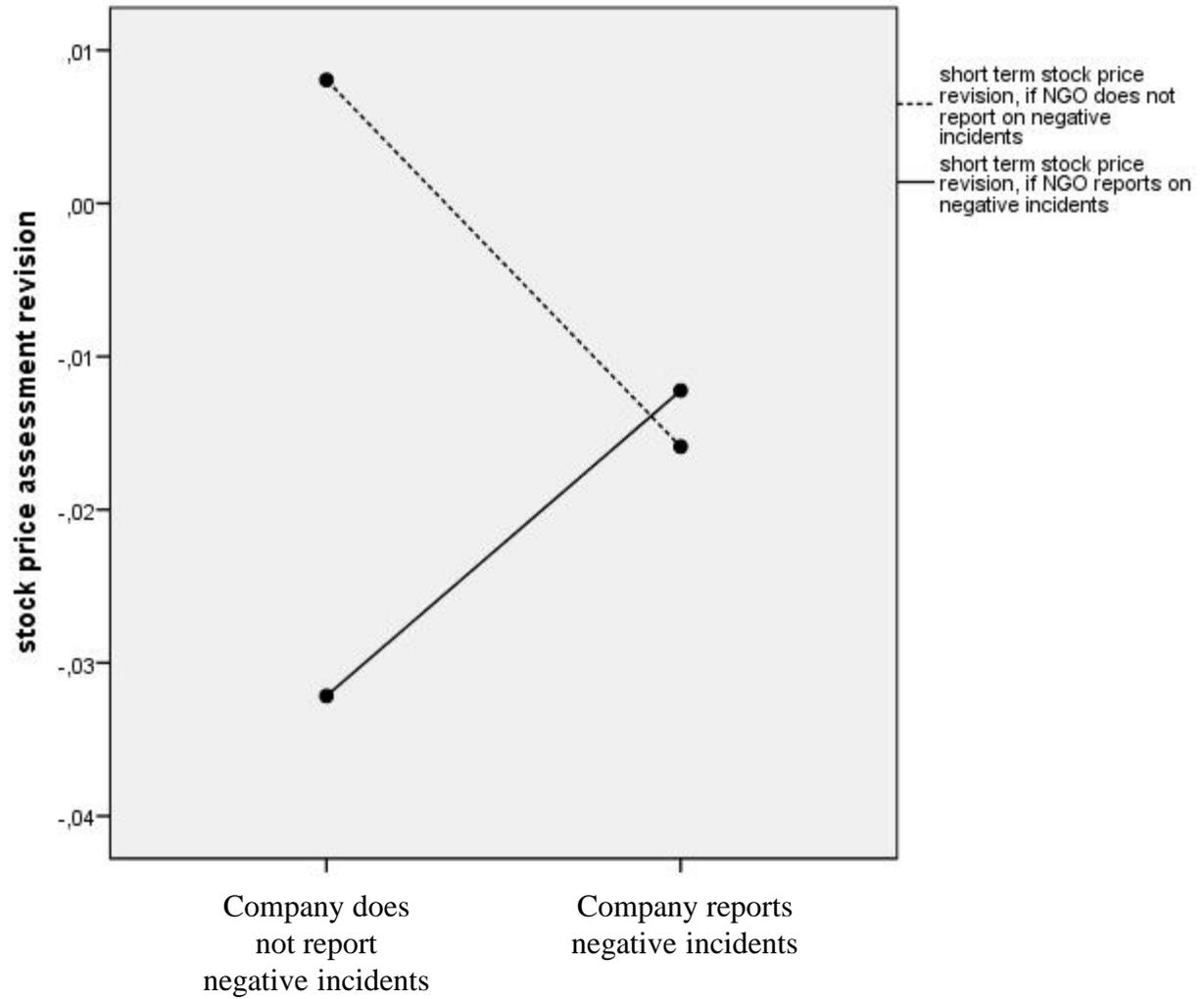
**Figure 1: Experimental groups**

		Third party (NGO) reports negative incidents	
		yes	no
Company reports negative incidents	yes	<i>Company &amp; NGO negative</i>	<i>Only company negative</i>
	no	<i>Only NGO negative</i>	<i>No negative</i>

**Figure 2: Flow of the experiment**



**Figure 3: Interaction Effect**



**Table 1: Investor Assessments**

**Panel A: Stock price assessments after viewing financial data only (short-term/long-term)**  
 Descriptive statistics (mean [SD])

		Third party (e.g. NGO) reports negative incidents						By Row		
		n	YES		n	NO				n
Company report negative incidents	YES	36	75.58	79.30	34	76.83	76.83	70	76.19	78.10
			[5.73]	[9.26]		[6.11]	[12.73]		[5.91]	[11.07]
	NO	37	75.97	77.64	36	75.18	74.44	73	75.58	76.06
			[5.04]	[9.48]		[5.04]	[10.50]		[5.02]	[9.90]
	<b>By column</b>	73	75.78	78.46	70	75.98	75.60	143	75.88	77.06
			[5.36]	[9.34]		[5.60]	[11.46]		[5.46]	[10.50]

Panel A report by-cell mean (\$), [standard deviation] and number of participants which provided stock price assessments. Stock price assessment is computed from the percent change in stock price assessment from the initial \$72 benchmark provided after viewing financial data only.

**Panel B Stock price assessments after viewing additional sustainability information (short-term/long-term)**  
 Descriptive statistics (mean [SD])

		Third party (e.g. NGO) reports negative incidents						By Row		
		n	YES		n	NO				n
Company report negative incidents	YES	36	74.38	78.74	34	75.58	77.21	70	74.96	77.99
			[3.56]	[8.38]		[5.94]	[11.47]		[4.86]	[9.96]
	NO	37	73.32	74.74	36	75.62	76.58	73	74.46	75.65
			[5.98]	[12.12]		[4.24]	[9.83]		[5.29]	[11.02]
	<b>By column</b>	73	73.84	76.71	70	75.60	76.89	143	74.70	76.80
			[4.93]	[10.57]		[5.10]	[10.58]		[5.07]	[10.54]

Panel B report by-cell mean (\$), [standard deviation] and number of participants which provided stock price assessments. Stock price assessment is computed from the percent change in stock price assessment from the initial \$72 benchmark provided after viewing additional sustainability information.

**Panel C: Investment decision after viewing financial data only**  
 Descriptive statistics (mean [SD])

		Third party (e.g. NGO) reports negative incidents						By Row		
		n	YES		n	NO				n
Company report negative incidents	YES	36	2,194.44		34	1,676.47		70	1,942.86	
			[1,425.67]			[1,205.31]			[1,339.32]	
	NO	37	1,864.86		36	1,722.22		73	1,794.52	
			[1,289.10]			[1,136.69]			[1,210.02]	
	<b>By column</b>	73	2,027.40		70	1,770.00		143	1,867.13	
			[1,358.85]			[1,162.21]			[1,272.61]	

Panel C report by-cell mean (\$), [standard deviation] and number of participants which provided investment amounts. Participants provided investment amounts using a scale marked in increments of \$500 with the endpoints of \$0 and \$5,000 after viewing financial information only

**Panel D: Investment decision after viewing additional sustainability information**  
 Descriptive statistics (mean [SD])

		Third party (e.g. NGO) reports negative incidents						By Row		
		n	YES		n	NO				n
Company report negative incidents	YES	36	2,347.22		34	1,705.88		70	2,035.71	
			[1,458.08]			[1,206.78]			[1,370.82]	
	NO	37	1,445.95		36	2,097.22		73	1,767.12	
			[1,418.06]			[1,263.89]			[1,374.58]	
	<b>By column</b>	73	1,890.41		70	1,907.14		143	1,898.60	
			[1,498.26]			[1,243.22]			[1,374.52]	

Panel C report by-cell mean (\$), [standard deviation] and number of participants which provided investment amounts. Participants provided investment amounts using a scale marked in increments of \$500 with the endpoints of \$0 and \$5,000 after viewing additional sustainability information.

**Table 2: Investor Assessment Revisions**

<b>Panel A: Stock price assessment revisions (short-term/long-term)</b>										
<b>Descriptive statistics (mean [SD])</b>										
		<b>Third party (e.g. NGO) reports negative incidents</b>								
		<b>n</b>	<b>YES</b>		<b>n</b>	<b>NO</b>		<b>n</b>	<b>By Row</b>	
<b>Company report negative incidents</b>	<b>YES</b>	36	-0.012	-0.004	34	-0.016***	0.013	70	-0.014**	0.004
			[0.064]	[0.060]		[0.030]	[0.091]		[0.050]	[0.076]
	<b>NO</b>	37	-0.032**	-0.038**	36	0.008	0.035*	73	-0.012	-0.002
			[0.086]	[0.104]		[0.055]	[0.104]		[0.075]	[0.110]
	<b>By column</b>	73	-0.022**	-0.021**	70	-0.004	0.024**	143	-0.013**	0.001
			[0.076]	[0.087]		[0.046]	[0.098]		[0.064]	[0.095]

Panel A reports by cell mean, [standard deviation] and number of participants which provided stock price assessments. Stock price revision is computed from the difference in the absolute stock price assessment before and after viewing additional sustainability information and scaling the outcome by the initial estimates before receiving the sustainability information. \*, \*\* and \*\*\* represent the results from a two-tailed t-test that the cell mean is significantly different from zero at the 0.1, 0.05 and 0.01 level.

<b>Panel B: Investment decision revisions</b>										
<b>Descriptive statistics (mean [SD])</b>										
		<b>Third party (e.g. NGO) reports negative incidents</b>								
		<b>n</b>	<b>YES</b>		<b>n</b>	<b>NO</b>		<b>n</b>	<b>By Row</b>	
<b>Company report negative incidents</b>	<b>YES</b>	36	152.78		34	29.41		70	92.86	
			[570.96]			[695.67]			[632.99]	
	<b>NO</b>	37	-418.92*		36	375.00**		73	-27.40	
			[1,497.75]			[839.86]			[1,274.45]	
	<b>By column</b>	73	-136.99		70	207.14**		143	31.47	
			[1,167.44]			[787.09]			[1,010.89]	

Panel B report by cell mean, [standard deviation] and number of participants which provided investment amounts. Investment decision revision is computed from the absolute change in the investment amount from just viewing financial data to the investment amount after viewing additional sustainability information. \*, \*\* and \*\*\* represent the results from a two-tailed t-test that the cell mean is significantly different from zero at the 0.1, 0.05 and 0.01 level.

**Table 3: Investor Assessment Revisions**

<b>Panel A: Results of ANOVA<sup>a</sup> (short-term stock price assessment revision)</b>						
Source	Prediction	DF	SS	MS	F-statistic	p-value
Corrected Model		3	0.030	0.010	2.542	0.059
Company reports	H1+	1	0.000	0.000	0.036	0.849
NGO reports	H2+	1	0.012	0.012	3.049	0.083
Company reports x NGO reports	H3+	1	0.017	0.017	4.392	0.038
Error		139	0.544	0.004		

<sup>a</sup> Panel A report reports the results of ANOVA of the short-term stock price assessment revision on variables defined in Table 1.

<b>Panel B: Results of ANOVA<sup>b</sup> (long-term stock price assessment revision)</b>						
Source	Prediction	DF	SS	MS	F-statistic	p-value
Corrected Model		3	0.102	0.034	4.052	0.009
Company reports	H1+	1	0.001	0.001	0.143	0.706
NGO reports	H2+	1	0.071	0.071	8.474	0.004
Company reports x NGO reports	H3+	1	0.028	0.028	3.294	0.072
Error		139	1.171	0.008		

<sup>b</sup> Panel B report reports the results of ANOVA of the long-term stock price assessment revision on variables defined in Table 1.

<b>Panel C: Results of ANOVA<sup>c</sup> (investment amount revision)</b>						
Source	Prediction	DF	SS	MS	F-statistic	p-value
Corrected Model		3	12,283,824.39	4,094,608.13	4.285	0.006
Company reports	H1+	1	456,496.58	456,496.58	0.478	0.491
NGO reports	H2+	1	4,014,856.20	4,014,856.20	4.202	0.042
Company reports x NGO reports	H3+	1	7,512,983.17	7,512,983.17	7.862	0.006
Error		139	132,824,567.21	955,572.43		

<sup>c</sup> Panel C report reports the results of ANOVA of the investment amount revision on variables defined in Table 1.

## Appendix A Overview of Provided Sustainability Information

Description of report content	Group that received report
<p><i>Alphacorp Sustainability Report (without negative incidents)</i></p> <ul style="list-style-type: none"> <li>- Code of conduct (extract)</li> <li>- Sustainability highlights from the previous year (i.e., a number of positive highlights regarding the ecological and social performance in the supply chain)</li> <li>- Audit data (i.e., selected data from supplier audits on ethical issues)</li> </ul>	<p>“Only NGO negative”</p> <p>“No negative”</p>
<p><i>Alphacorp Sustainability Report (including negative incidents)</i></p> <ul style="list-style-type: none"> <li>- Same as above plus</li> <li>- Disclosure of a number of negative incidents in the supply chain (e.g., “6 active and 13 historical cases of underage labor at 5 supplier facilities”)</li> <li>- Corrective action for each incident (e.g., “We required the suppliers to support the young workers’ return to school and to improve their management systems to prevent recurrences”)</li> </ul>	<p>“Company &amp; NGO negative”</p> <p>“Only company negative”</p>
<p><i>Independent NGO report (including “self-reported incidents”)</i></p> <ul style="list-style-type: none"> <li>- Brief section on the NGOs mission (“... committed to improve the transparency of business activities ...”)</li> <li>- Section repeating the incidents and corrective action from <i>Alphacorp Sustainability Report (including negative incidents)</i></li> <li>- Brief pledge to further monitor the company closely and its adherence to the promised corrective action</li> </ul>	<p>“Company &amp; NGO negative”</p>
<p><i>Independent NGO report (including “uncovered incidents”)</i></p> <ul style="list-style-type: none"> <li>- Brief section on the NGOs mission (see above)</li> <li>- Section highlighting the same negative incidents as above</li> <li>- Brief explanation of how the incidents were uncovered (“media reports as well as our own investigations”)</li> </ul>	<p>“Only NGO negative”</p>

## Appendix B Selected Questions from Questionnaires 1, 2, and 3

### Questionnaires #1 and #2:

Please answer the following questions **by checking the boxes and/or** by giving a **specific value**

(**Questionnaire 2:** You have now the chance to revise your initial assessments):

1) *Alphacorp's price per share* for common stock was **\$72** on the day preceding the release of the earnings press release.

a) Which **short-term** scenario do you expect? (please choose only one (!) scenario):

The stock price will **decrease in the short-term**, i.e. by \_\_\_\_\_ %

The stock price will **increase in the short-term**, i.e. by \_\_\_\_\_ %

The stock price will **not change in the short-term**.

b) Which **long-term** scenario do you expect? (please choose only one (!) scenario):

The stock price will **decrease in the long-term**, i.e. by \_\_\_\_\_ %

The stock price will **increase in the long-term**, i.e. by \_\_\_\_\_ %

The stock price will **not change in the short-term**.

2) Assume that you already own a diversified stock portfolio and you have another \$5,000 to invest. Please indicate on the scale below how much (if any) of the \$5,000 you would invest in Alphacorp's common stock.

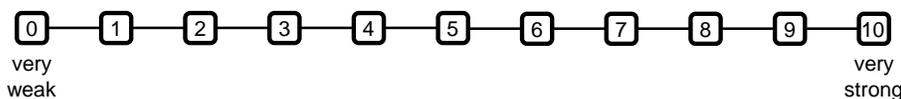
*Assume that the distances between the boxes are equal!*



### Questionnaire #2:

3) Please indicate on the scale below your perception of Alphacorp's sustainability performance!

*Assume that the distances between the boxes are equal!*



### Questionnaire #3:

4) I considered information on “Sustainability” as relevant when assessing of the development of *Alphacorp's* stock price.

O true   O not true