

Signaling Through Corporate Accountability Reporting

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Abstract

We examine whether the content of a firm's corporate accountability report provides information about the future financial prospects of the firm. We find that corporate social responsibility ("CSR") expenditures do not improve future financial performance. Rather, firms undertake CSR investments in the current period in anticipation of stronger future financial performance. We show that the causality of the positive association between CSR investments and future firm performance is different from what is claimed in the vast majority of the literature, and that corporate accountability disclosures are another channel by which firms convey financial prospects to outsiders.

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1. Introduction

We examine the relation between information disclosed in corporate accountability reports and firm performance. Specifically, we explore whether expenditures on Corporate Social Responsibility (“CSR”) are a form of corporate charity, an investment that is expected to earn a positive return, or a signal by which managers convey their private information about the firm. Consistent with other studies, we find a positive association between future financial performance and CSR investments, rejecting the hypothesis that CSR spending is a form of corporate charity. However, unlike these studies, we find that the source of the positive association is more likely due to the signaling value of CSR investments than positive economic returns on those investments. We conclude that current period CSR investments do not cause improvements in firms’ future performance, but rather that the anticipation of future financial performance causes firms to undertake CSR investments in the current period. In fact, we find that, on average, presumably costly CSR expenditures are negatively associated with shareholder value. Our interpretation of the findings is contrary to a large majority of the studies that examine the link between CSR investments and future firm performance, even though our initial empirical results mirror those documented by these studies.

The motivation for our approach to understanding the content of corporate accountability reports, and its consequences for shareholder value, can be illustrated by a simple example. A firm has had a breakthrough in its operations that will result in substantially increased profitability in the future. If this firm decides to undertake a costly CSR initiative in the current period, it is arguably because of the anticipation of improved future performance rather than current performance. However, a researcher examining this firm could mistakenly conclude that

increased CSR investment has caused improved financial performance by looking at the relation between current CSR expenditures and future financial performance.

The omitted variable in this example, management's private information about the future prospects of the firm, impacts not only whether there is an association between the CSR investment and firm performance, but also on the direction of the causality. Based on this motivation, we hypothesize that there are three possible explanations for CSR expenditures. First, firms undertake CSR activities because it is beneficial for society, expecting nothing in return – we refer to this as the corporate charity hypothesis. Second, firms undertake CSR activities because it is an investment, expecting a positive economic return – we refer to this as the investment hypothesis.¹ Third, CSR spending may be a type of expenditure that is undertaken by firms who expect strong performance, with the result that CSR expenditures signal information about the future prospects of the firm – we refer to this as the signaling hypothesis.

The key distinction between the charity hypothesis and the investment and signaling hypotheses is that in the case of the former, there is no relation between CSR expenditures and subsequent performance (although there may be a relation between current performance and CSR expenditures). The key distinction between the signaling and the investment hypothesis is that in the case of signaling, the firm's financial improvements are not the result of CSR investments, but rather, the firm's decision to undertake CSR activities is a product of managements' expectations of (or potentially managements desire to signal) future financial improvements. While distinguishing charitable expenditures from either investment or signaling motives is straight forward, distinguishing between the latter two is more difficult, as both are associated with enhanced future performance.

¹ For example, CSR expenditures might improve a firm's reputation, increase employee morale and productivity, enhance the firm's ability to negotiate with regulators, and result in better product market outcomes, such as allowing the firm to charge higher prices.

The methodological innovation of our analysis relative to prior studies is that we split CSR investment into two components: (a) the component that can be explained by investment based factors (i.e., predicted CSR investment) and (b) the component that is unrelated to investment based factors (i.e., excess CSR investment). This approach allows us to identify whether future performance is associated with either the predicted or excess amount of CSR investment, which in turn, allows us to discriminate between the investment and signaling effects of CSR investment. If CSR spending is a good economic investment, then there will be a positive association between predicted CSR investment and future firm performance. On the other hand, if CSR investment is something that conveys the firm's future prospects, then there will be a positive association between excess CSR investment and future firm performance.

We begin our analysis by studying the impact of CSR investment on future firm performance. Consistent with prior studies, we document a positive relation between CSR investment and future performance. We find a positive association between CSR investment and changes in both ROA and operating cash flow, but only an insignificant association with size adjusted returns. These results are inconsistent with the charity hypothesis, which implies that CSR expenditures should not impact the firm's future performance, but consistent with both the investment and signaling hypotheses.

Next, we consider the differential impact of the predicted and excess components of CSR investment. We find that, on average, the improvement in firms' future performance is associated with the excess rather than the predicted CSR investment. Moreover, our tests using size adjusted returns indicate that CSR investments result, on average, in a decrease in shareholder value and that the overall positive effect of CSR investment on firm value comes from the signaling value of the CSR investment. These results are inconsistent with the investment hypothesis, which

implies that predicted CSR expenditures should positively impact the firm's future performance, but consistent with signaling hypothesis, which implies that excess CSR expenditures should positively impact the firm's future performance.

We make several contributions to the literature. First, we identify the signaling value of CSR investments. This important attribute of corporate accountability reporting has been overlooked by the current literature, and has led to erroneous conclusions on the association between CSR investments and future financial performance. In addition, we find that CSR expenditures are driven by future financial performance, rather than current period performance. In other words, we show that CSR initiatives are not undertaken solely based on current performance, but rather, we show that firms undertake CSR investments in the current period in anticipation of future financial performance.

While our tests focus on corporate accountability reporting, we believe that our results have broader implications for both the signaling and voluntary disclosure literatures. Traditionally, financial market signaling requires that a firm complete an observable action to signal that the firm is of a certain type. For example, a firm might declare higher dividends to signal that it has higher future expected cash flows (Bhattacharya, 1979; Miller and Rock, 1985; John and Williams, 1985). In our case, we do not require that the firm wishes to signal that it has strong future prospects when it commits to the investment in and disclosure of a certain CSR initiative. Even if the firm undertook those actions to communicate that it is a socially responsible firm, our results indicate that the information in the corporate accountability report can be used to validate whether the firm is also financially prosperous. In other words, we find that voluntary nonfinancial disclosures signal information about the future financial prospects of the firm.

This paper proceeds as follows. Section 2 provides the background on each of the charity, investment and signaling hypothesis. Section 3 and 4 describes the data and our research design. Section 5 summarizes our results and Section 6 concludes.

2. Literature Review and Hypothesis Development

Corporate social responsibility is a voluntary form of corporate self-regulation, whereby companies earn and distribute profits with concern for economic, social and environmental impacts.^{2,3} Despite clear economics-based arguments suggesting that CSR activities undertaken by for-profit enterprises are by definition irresponsible (Friedman, 1970), the trend toward increased focus on CSR initiatives has strengthened over the past decade. This increased focus has not come without critics, with some parties continuing to follow Friedman's intuition by claiming that certain CSR activities seem inconsistent with improved shareholder value.⁴

The academic literature is also divided in its views of the benefits of CSR activities to the firm. Campbell (2007) builds a theory of the demands for CSR activities in which he argues that only successful firms will be asked to undertake social investments. The implicit assumption in this argument is that CSR initiatives use corporate resources, which implies that CSR investment is akin to a form of corporate charity. That is, CSR initiatives are undertaken by firms without any expectation of a positive economic return on its investment. This leads to our first hypothesis:

² http://www.hks.harvard.edu/m-rcbg/CSRI/init_define.html

³ Some specific examples of CSR initiatives can be found in the Corporate Social Responsibility in Practice Handbook, available online at <http://www.pathfinder.org/publications-tools/pdfs/CATALYST-Corporate-Social-Responsibility-in-Practice-Casebook.pdf>

⁴ Consider the following excerpt from Business Week, 2005: It's 8:30am on a Friday in July, and Carol B. Tomé is starting to sweat. The chief financial officer of Home Depot Inc. isn't getting ready to face a firing squad of investors or unveil troubled accounting at the home improvement giant. Instead, she and 200 other Home Depot employees are helping to build a playground replete with swings, slides, and a jungle gym at a local girls' club in hardscrabble Marietta, Ga. ... Is this any way to build shareholder value at Home Depot, where the stock has been stuck near \$43, down 35% from its all-time high?

H1: CSR investments are not positively related to future firm performance (Charity Hypothesis).

There are at least two other explanations for an empirical finding under the charitable hypothesis that may at first appear inconsistent with our motivation. First, it could be that the firm simply made bad investments. In other words, an action was taken by the firm with the expectation that it would enhance firm value, but that was not the actual result. Second, certain CSR expenditures could encompass perquisite consumption by CEOs in the form of spending on their own pet projects that also happen to be socially responsible.⁵ In both of these cases, the ex ante driver for the CSR expenditure is different, but the end-result is still consistent with the charitable hypothesis. We view charity as an expenditure that does not create firm value. Therefore, since both poorly executed investments and additional perk consumption are expenditures that do not create firm value, they are equivalent to charity as we use the term.

Other studies have argued that CSR investment provides positive economic returns to the firm. These studies have generally focused on specific mechanisms. For example, a high commitment to CSR activities is associated with attracting and retaining higher quality employees (Greening and Turban, 2000), improving the effectiveness of the marketing of products and services (Fombrun, 2005), increasing demand for products and services (Navarro, 1988), and providing superior access to valuable resources (Cochran and Wood, 1984). There are also indirect channels through which CSR investment has been posited to improve a firm's prospects. For example, CSR investment has been hypothesized to act as a form of reputation insurance (Peloza, 2006) and to mitigate the likelihood of negative regulatory or legislative

⁵ Consider the following excerpt from the Wall Street Journal, dated August 7, 2002: Mr. Kozlowski was known for spending his own time and money on worthy causes. But he was also very generous with Tyco's money, donating tens of millions of corporate dollars to charities he favored -- often getting credit in his own name rather than Tyco's. A Maine private school attended by his daughters got \$1.7 million in Tyco money for its Kozlowski Athletic Center, while his alma mater, New Jersey's Seton Hall University, received a \$5 million Tyco pledge for Kozlowski Hall.

action (Hillman and Keim, 2001). The benefits of CSR investment have also been found to extend beyond traditional measures of firm performance. For example, Dhaliwal et al. (2011) find that the voluntary disclosure of CSR activities leads to a reduction in the firm's cost of capital, while attracting institutional investors and broader analyst coverage. Collectively, these studies suggest that CSR investment is associated with enhanced firm performance.

However, even though these studies provide a link between current CSR investments and future firm performance, the evidence does not necessarily imply that CSR investments cause improvements in the firm's performance. In their review of the literature on the association between corporate financial performance and CSR activities, Margolis et al (2007) note that the existing body of research focuses on how a strong commitment to CSR initiatives improves firm performance, but does not consider the reverse—that strong firm performance leads to CSR investments. Anecdotally, this latter explanation seems reasonable. *Ceteris paribus*, a firm with more operational slack is more likely to undertake pet projects (Fazzari et al, 1988), and such projects can include CSR related activities.

Consider again the example we provided earlier. A successful firm has had a breakthrough in its operations that will allow it to manufacture its primary product for a fraction of its current cost, thus creating the expectation among senior management that its profitability will soar in the future. Based on these facts, it is not unreasonable to conclude that if this firm were to increase its level of CSR investments in the current period, it is because of the anticipation of improved future rather than current performance. As noted before, however, a researcher examining this firm could mistakenly conclude that increased CSR investment has caused improved financial performance by looking at the relation between current CSR expenditures and future financial performance. We seek to distinguish between these competing

causal interpretations. We label the situation in which CSR investment causes improvements in the financial performance of the firm the investment hypothesis, and the situation in which CSR investment is made in anticipation of improved financial performance the signaling hypothesis.

H2: CSR investments cause improvements in future firm performance (Investment Hypothesis).

H3: Private information regarding future firm performance causes firms to undertake CSR investments (Signaling Hypothesis).

3. Data

We collect information on CSR activities from the Thomson Reuters ASSET4 database,⁶ which provides comprehensive CSR data for firms in the Russell 1000 starting with 2002. Our primary measure of CSR investment is A2IR, which is the CSR score produced by Asset4 that only includes social and environmental factors,⁷ and does not reflect financial performance or corporate governance factors. We exclude financial and governance factors because those are less connected with the notion of social investments, which benefit society at large rather than a specific group, such as the firm's shareholders. A2IR is a measure of the firm's social performance, which can be influenced by the level of disclosure, the types of investments undertaken by the firm, and the potential success of those investments. Consistent with other studies, we assume that a firm's A2IR score is directly related to the level of the firm's CSR

⁶ Founded in 2003, ASSET4 was a privately held Swiss-based firm until it was acquired by Thomson Reuters in 2009. The firm has collected data and scored firms on financial, governance, environmental and social dimensions since 2002. Research analysts of ASSET4 collect more than 900 evaluation points per firm, where all the primary data used must be objective and publicly available. Typical sources include stock exchange filings, annual financial and sustainability reports, nongovernmental organizations' websites, and various news sources. Subsequently, these 900 data points are used as inputs to a default equal-weighted framework to calculate 250 key performance indicators (KPIs) that they further organize into 18 categories within four pillars: a) economic performance score, b) environmental performance score, c) social performance score and d) corporate governance performance score. Every year, a firm receives a z-score for each of the pillars, benchmarking its performance with the rest of the firms in the database. Each firm takes one analyst approximately one week to evaluate.

⁷ A description of the social and environmental factors, as outlined in the Asset4 documentation, is provided in Appendix B.

investments (e.g. Servaes and Tamayo, 2012; Margolis et al, 2007). This assumption is reasonable, after we control for industry, because the level of disclosure and the anticipated success of various types of CSR investments are relatively comparable within industries.

Table 1 shows the number of firms in our sample by year. Our sample grows over the period, consistent with the increased demand for CSR related measures. In our tests, we use the entire sample, and run robustness tests to confirm that our results are similar for a group of firms that are in the sample for each period. We use several measures of the intensity of the corporate accountability reporting—whether the firm issues a standalone CSR report, whether than report uses the GRI reporting framework,⁸ and whether the report has been audited.

For each firm-year observation, we collect financial data from Compustat and stock return information from CRSP. We truncate all continuous variables at the first and 99th percentile. Table 2 reports descriptive statistics of the variables used in the regression analyses, and in Appendix A we provide further details on the variable measurement. Table 3 presents the pair-wise Pearson correlations of the variables. The highest correlations are between our various proxies for CSR investment, corporate accountability reporting, and between firm size and these variables.

4. Research Design

We examine whether CSR investment is related to future firm financial performance using the following specifications:

$$\Delta ROA_{t+1} = \alpha_{0a} + \alpha_{1a}CSR_t + \alpha_{2a}\Delta ROA_t + \alpha_{3a}ROA_{t-1} + \epsilon_{1a} \quad (1a)$$

$$\Delta CFO_{t+1} = \alpha_{0b} + \alpha_{1b}CSR_t + \alpha_{2b}\Delta CFO_t + \alpha_{3b}CFO_{t-1} + \epsilon_{1b} \quad (1b)$$

⁸ The GRI framework is a comprehensive structure that enables greater transparency on environmental and social performance. Details are available at: <https://www.globalreporting.org/information/about-gri/what-is-GRI/Pages/default.aspx>.

$$SAR_{t+1} = \alpha_{0c} + \alpha_{1c}CSR_t + \epsilon_{1c} \quad (1c)$$

We measure firm performance using future changes in Return on Assets “*ROA*” (i.e., $ROA_{t+1} - ROA_t$), operating cash flow scaled by total assets “*CFO*” (i.e., $CFO_{t+1} - CFO_t$) and size adjusted stock returns “*SAR*” (size adjusted returns for the 12 month period beginning on the first day of fiscal year $t+1$). Each variable is described in more detail in Appendix A. We include controls for the mean reversion in the dependent variable in each specification. For example, equation (1a) includes controls for lagged *ROA* (i.e. ROA_{t-1}) and the change in current *ROA* (i.e., $ROA_t - ROA_{t-1}$).⁹ For each specification, the charity hypothesis implies that $\alpha_1 = 0$, while the investment and the signaling hypotheses both imply $\alpha_1 > 0$.

The first two specifications use accounting based measures of performance. We use *ROA* as it is the most commonly used measure of accounting performance. We use *CFO* because operating cash flow is more persistent and more difficult to manipulate than reported earnings (Sloan, 1996). We use *SAR* because in a semi-strong-form-efficient market, returns provide a more complete picture of firm performance. In particular, the stock market takes into account all publicly available information and all possible channels through which CSR investments can impact firm value, even if that impact is only through the creation of an intangible asset. This approach allows us to capture long term improvements from beneficial CSR investments, which may impact stock returns while not impacting either the subsequent year’s *ROA* or *CFO*.

⁹ Without controls for lagged measures of performance, there would be a positive mechanical association between future changes in accounting performance and CSR_t , to the extent that the returns to CSR_t are not materialized until future periods. For example, a charitable contribution in period t will reduce current period income and hence reduce ROA_t . To the extent that there is a negative correlation between ROA_t and CSR_t , there will be a positive correlation between ΔROA_{t+1} (i.e. $ROA_{t+1} - ROA_t$) and CSR_t (under the assumption that the CSR expenditure does not persist in period $t+1$). The inclusion of ROA_{t-1} and ΔROA_t as control variables means that any of the mechanical aspects of the positive relationship between ΔROA_{t+1} and CSR_t is not included in the coefficient on CSR_t , our variable of interest.

In robustness tests, we separate the improvements associated with current CSR expenditures by including future *ROA* (i.e. ROA_{t+1}) as an additional control in equation (1c). Under this approach, the coefficient on *SAR* only reflects performance improvements that have not materialized in period $t+1$ accounting results. In other words, the coefficient on *SAR* reflects improvements that will occur in accounting results in $t+2$ and later periods. This specification does not impact any of our conclusions.

To distinguish between whether CSR is an investment or a signal, we assume that, based on the firm's performance, operating characteristics and industry, there is an expected level of CSR investment. Under this approach, any amount of CSR investment in excess of this level is excess investment, and hence is more likely to be a signal. We implement this approach by first splitting CSR investment into two components: (a) the component that can be explained by investment based factors and (b) the component that is unrelated to investment based factors. We refer to the first component as the predicted CSR investment, and the latter as the excess CSR investment. Specifically, we determine the predicted and excess amounts of a firm's CSR investments by estimating:

$$CSR = \beta_0 + \beta_1 Firm\ Factors + \beta_2 Industry\ Factors + \varepsilon_2 \quad (2)$$

We use the fitted value of CSR investment from equation (2) as a proxy for the predicted level of CSR investments and the residual from equation (2) as a proxy for the excess level of CSR investments. The underlying assumption is that in a semi-strong-form-efficient market, investors would expect firms to undertake the predicted amount of CSR investments. Under the investment hypothesis, deviations from this amount should not impact future firm performance. In contrast,

deviations from the predicted amount under the signaling hypothesis should be positively correlated with future firm performance.

To make sure that our firm and industry factors explain as much of the variation in CSR investment as possible, we conduct an extensive search for factors identified by the previous literature as relevant in the study of CSR investment. Specifically, we include advertising and R&D expenses because firms with higher expenditures in these areas have been found to invest more heavily in CSR related activities (Shane and Spicer, 1983; Wieser, 2005; McWilliams and Siegel, 2000). We include litigation expenses because CSR investments have been shown to act as reputation insurance (Peloza, 2006). We include the natural log of total assets to proxy for firm size, because larger firms may have greater resources for CSR investments and attract greater pressure to engage in CSR related activities (Wu, 2006; Teoh et al, 1999). We include a measure of the firm's overall corporate governance score because of the suggestion that corporate governance is associated with the scope and effectiveness of CSR investments (Johnson and Greening, 1999).

We include book leverage and market-to-book because stable firms with lower risk generally appear more likely to make CSR investments (Cochran & Wood, 1984; Orlitzky and Benjamin, 2001). We include the level of cash, cash flow from operations and return on assets to proxy for firm performance, which some suggest enables or gives rise to the external demand for CSR investment (Preston and O'Bannon, 1997; Campbell, 2007). Lastly, we include industry fixed effects due to the variation in environmental impact, growth prospects, disclosure requirements and regulatory oversight in different industries, all of which are expected to affect the level of CSR investment (Karpoff et al, 2005; Griffin and Mahon, 1997; Spencer and Taylor, 1987).

We take the fitted and residual values from equation (2), and test the association between future firm performance and these components of CSR investment using the following specifications:

$$\Delta ROA_{t+1} = \gamma_{0a} + \gamma_{1a}\widehat{CSR} + \gamma_{2a}\widehat{\epsilon}_2 + \gamma_{3a}\Delta ROA_t + \gamma_{4a}ROA_{t-1} + \epsilon_{3a} \quad (3a)$$

$$\Delta CFO_{t+1} = \gamma_{0b} + \gamma_{1b}\widehat{CSR} + \gamma_{2b}\widehat{\epsilon}_2 + \gamma_{3b}\Delta CFO_t + \gamma_{4b}CFO_{t-1} + \epsilon_{3b} \quad (3b)$$

$$SAR_{t+1} = \gamma_{0c} + \gamma_{1c}\widehat{CSR} + \gamma_{2c}\widehat{\epsilon}_2 + \epsilon_{3c} \quad (3c)$$

The investment hypothesis implies that future firm performance is positively correlated with predicted CSR investment and that there is no relation between excess CSR investment and future firm performance. As a result, the investment hypothesis implies $\gamma_1 > 0$ and $\gamma_2 = 0$. In contrast, under the signaling hypothesis there should be no association between predicted CSR investment and future firm performance. However, there should be a positive association between excess CSR investment and future firm performance. Therefore, the signaling hypothesis implies $\gamma_1 = 0$ and $\gamma_2 > 0$.

Our approach of identifying associations using the fitted and residual values of a first stage regression is commonly used in the compensation literature (Bebchuk and Grinstein, 2005), where executive compensation is divided into the portion which is explained by firm-specific economic determinants and the portion which is unexplained by such determinants. This is done so that the researcher can tie the variable of interest (e.g., accounting fraud) to the unexplained or excess portion of compensation. As an example, in one of the earlier studies using this approach, Core et al (1999) estimated excess compensation as the residual from a regression of total compensation on a set of economic characteristics, including sales, ROA, and stock returns, and

then tested whether this residual was associated weaker governance structures and poor future operational performance.

Despite the widespread use of this approach in other areas of research, there is an important caveat that is often not explicitly stated. Specifically, this approach relies on the assumption that the first stage model in equation (2) is *complete*. If there is an omitted variable in equation (2) that predicts the level of CSR investment, then omitting that variable will result in the residual containing the information from that variable that is orthogonal to the other explanatory variables in equation (2). However, while in theory this is a valid concern, we believe that this is not a major concern for our empirical results for two reasons. First, our exhaustive review of the literature makes it unlikely that we have missed a critical explanatory variable. Moreover, the range and scope of the explanatory variables we have included in equation (2) make it unlikely that another variable would impact our fitted and residual values in a substantial way. This is evident in the results of this regression, which we outline in detail in the next section.

To summarize, under the charity hypothesis $\gamma_1 = 0$ and $\gamma_2 = 0$ as CSR investment does not impact future firm performance. Under the investment hypothesis, $\gamma_1 > 0$ and $\gamma_2 = 0$, as predicted CSR investment will be associated with future performance, but excess CSR investment will not. Lastly, the signaling hypothesis implies $\gamma_1 = 0$ and $\gamma_2 > 0$ as the information conveyed about the firm by its CSR investments is through the excess component.

5. Results

The regression results for equations (1a) and (1b) are provided in columns 1-2 of Table 4. The coefficient on CSR investment, α_1 , is positive and significant in both the ROA and CFO

regressions. A positive value for α_1 indicates that there is an association between higher current CSR investment and future firm performance. This is contrary to the charity hypothesis (i.e. $\alpha_1 = 0$), but is consistent with both the investment and signaling hypotheses, which both imply that $\alpha_1 > 0$. As expected, the coefficients on our control variables for lagged and current performance are negative and highly significant, due to the documented mean reversion in both ROA and CFO. The regression results for equation (1c) are reported in column 3. Unlike the results in columns 1-2, the coefficient on CSR investment for the SAR regression is not significant, although the coefficient is positive. When viewed in combination with the results in columns 1-2, we can conclude that there is a positive association between CSR investment and future firm performance, and hence that CSR investments are not well described by the charity hypothesis.

We include several different CSR related variables in the specifications in columns 4-6 to identify if there is a specific type of CSR activity that is driving the results in columns 1-3. The social score and the environmental score are the two principal components of A2IR, our primary measure of CSR investment. We include the corporate governance score, as that is sometimes included as part of broader measures of CSR investment. We also include three measures of the scope of a firm's CSR disclosures—whether there is an official standalone corporate accountability report, whether the report follows the GRI sustainability reporting framework, and whether the report is subject to a voluntary audit. None of the coefficients on any of these variables suggest that a single variable is driving our results.

Only the social component has a reasonable level of significance in each specification, with t-statistics ranging from 1.15 to 2.80. The *CSRAUDIT* variable has a reasonable level of significance in the ROA specification in column 4, and the *CSRGRI* variable has a reasonable level of significance in the SAR specification in column 6. However, contrary to our expectation,

this latter coefficient is negative. If significant, this would imply that following the GRI sustainability reporting framework has a negative association with firm performance, after controlling for the actual social and environmental performance of the firm.

The results in Table 4 provide no information that allows us to distinguish between the investment and signaling hypotheses. Our first step in identifying whether CSR investments fit the signaling or investment hypotheses is to estimate a model that separates CSR investment into that portion which can be explained by firm and industry factors and that portion which cannot. We do this with equation (2), the results of which are provided in Table 5. We include two specifications—one in which we include contemporaneous *ROA*, and a second where we split *ROA* into its constituent components: Asset Turnover and Profit Margin. We do this not only to improve the fit of our model, but also to investigate what portion of firm performance is associated with higher levels of CSR investment, as profit margin and asset turnover measure different aspects of profitability and are therefore likely to have different persistence (Nissim and Penman, 2001). Consistent with our expectations, we find that the positive association between *ROA* and CSR investment is driven by asset turnover, the more persistent component of *ROA*, rather than profit margin.

The coefficients on our remaining independent variables are also consistent with our expectations. The level of significance for the coefficients on these variables varies across columns 1-2, but the coefficients are always of the same sign. The results in Table 5 indicate that higher levels of CSR investments are associated with higher levels of cash (the coefficients on cash and *CFO* are positive both specifications, and the coefficient on *CFO* is also significant in column 2), lower levels of leverage (the coefficients on book leverage are negative in both specifications, and statistically significant in column 1), higher levels of market-to-book (the

coefficients are positive and statistically significant in both specifications), larger firm size (the coefficients are positive and statistically significant in both specifications), higher R&D and advertising expenses (the coefficients on R&D and advertising are positive in both specifications, and the coefficient on R&D is also significant in column 2), and better corporate governance (the coefficients are positive and statistically significant in both specifications). The coefficients on litigation risk are consistent in sign, but have very low t-statistics suggesting that there is no association between this variable and CSR investment.

We test whether CSR investment is associated with current *ROA* by including future period *ROA* (i.e. ROA_{t+1}) in the specification in column 1 of Table 5 as an additional control variable. In untabulated results, we find that the coefficient on ROA_{t+1} is statistically significant, the coefficient on ROA_t is not statistically significant (t-statistic = 0.80), and all of our other coefficients are generally unaffected. These results imply that current period CSR investments are not correlated with current period *ROA* once we control for future period *ROA*. This is consistent with our signaling hypothesis, because it implies that firms that undertake CSR investments do so not because of current period financial performance, but in anticipation of future period financial performance. It also provides assurance that any correlations we find between changes in future period *ROA* and current period *CSR* are not due to a mechanical relationship between current period *CSR* and current period *ROA*.

Our models in Table 5 have relatively high explanatory power, with an adjusted R-squared of 52%. In untabulated results, we find that the adjusted R-squared is 33% when we run equation (2) without including industry and year fixed effects, indicating that the explanatory variables in our model describe a significant portion of the variation in CSR investment. As noted earlier, the fitted and residual values for CSR investment that we derive in Table 5 are

critically important in our remaining tests. Therefore, we conduct a series of robustness tests on our model to ensure that our later results are not impacted by a research design choice.

Specifically, we generate fitted and residual values for CSR investment by randomly dropping one of the independent variables from our model, by excluding industry fixed effects from our model, and by using lagged values for our independent variables to mitigate any look-ahead bias.

The most significant change in our model occurs when we drop the corporate governance score, and for this reason, we have produced those results in columns 3-4 of Table 5. Dropping corporate governance has a significant impact on the adjusted R-squared, which drops about 10 percentage point from 52% to 42%. However, each of the other explanatory variables is generally unaffected. The coefficients retain the same signs, and the significance levels are similar when viewed across both specifications. This same pattern holds for each of our robustness tests—the fit of the model is weakened, but the coefficients on the independent variables are generally consistent. More importantly, the fitted and residual values for CSR investment from each approach produce equivalent results in the next stage of our analysis. Therefore, for brevity, we only produce later results using the fitted and residual values for CSR investment from the specification in column 2.

We take the fitted values and residual values produced by the specification in column 2 of Table 5 and use them as independent variables in equations (3a), (3b) and (3c). The fitted value is used as the predicted CSR investment, and the residual is used as the excess CSR investment. The results are presented in Table 6. In columns 1-2, we find that excess CSR investment is highly correlated with both *ROA* and *CFO* ($\gamma_2 > 0$), but that no such association exists between either *ROA* or *CFO* and the predicted level of CSR investment ($\gamma_1 = 0$). In other words, we find that future firm performance, as measured by subsequent year's changes in either

ROA or *CFO*, is positively associated with excess CSR investment, but that predicted CSR investment has no such relation. These results are inconsistent with the investment hypothesis, which requires that the coefficient on predicted CSR investment be positive. However, they are consistent with the signaling hypothesis, which implies $\gamma_1 = 0$ and $\gamma_2 > 0$.

Column 3 reports the results of equation (3c), which uses SAR as the measure of firm performance. This measure has two principal advantages compared with both *ROA* and *CFO*. First, market based measures do not have a finite horizon, which allows the improvements associated with CSR investments to occur in accounting measures that cover periods beyond the next fiscal year. Second, we don't need to include lagged values for firm performance because unlike accounting based measure, market measures do not exhibit mean reversion. This latter reason has implications for the coefficient on the fitted value of CSR investment because we determine predicted CSR investment from a model that includes contemporaneous *CFO* and *ROA*. As a result, the coefficients on predicted CSR investment in columns 1-2 are biased.

The coefficient on excess CSR investment in column 3 of Table 6 is positive and highly significant ($\gamma_2 > 0$). This is consistent with the signaling hypothesis (the investment hypothesis implies that $\gamma_2 = 0$). Unlike the results in columns 1-2, the coefficient on predicted CSR investment is negative and statistically significant ($\gamma_1 < 0$). This is contrary to our expectation, as it implies that the market reacted negatively to predicted CSR investment, which by definition, should be anticipated by the market. However, this negative coefficient does not necessarily imply that the SAR specification results are inconsistent with either the *ROA* or *CFO* specifications. In particular, it could be the case that CSR investments generate returns, but that those returns are less than the cost of capital. This would have the effect of increasing accounting based measures of performance, but could result in lower stock returns. We test the robustness of

this result by including future period ROA as a control in both equations (1c) and (3c). This allows us to separate the returns that are due to improvements in the current period from returns that are attributable to improvements that will materialize in later periods. Our conclusions are unchanged.

In summary, consistent with other studies, we find a positive association between CSR investment and future firm performance. However, when we separate CSR investment into predicted and excess components, we find results that are inconsistent with the vast majority of the literature that examines the relation between financial performance and CSR investment (Margolis et al, 2007). We find that the predicted level of CSR investment has no relation with accounting performance and is negatively correlated with size adjusted returns. In addition, we also document that excess CSR investment is positively correlated with both accounting and stock market based performance measures. In other words, we find that the benefits of CSR investments come from its signaling value. Our findings do not follow the causal structure claimed elsewhere—that is, that high levels of CSR investment lead to strong financial performance. Rather, we find that the anticipation of strong financial performance encourages CSR investment.

Our next step is to conduct robustness checks on our findings. We begin by analyzing the effect of the return window on our results. Specifically, the market reaction to the announcement of CSR expenditures can occur at a different rate depending on the nature of the expenditure. In particular, CSR expenditures that are investments may not be impounded in prices until the cash flows from the investment are realized or at least anticipated by the market. On the contrary, under the signaling hypothesis, all of the information is contained in the signal itself, which suggests that the effect should manifest during a relatively short window surrounding the period

in which the market learns of the signal. The application of return window tests in our setting is complicated by the fact that CSR expenditures generally occur throughout the year, and so unlike other “signaling” devices such as dividends, there isn’t a single announcement date for all the firm-years in our sample. However, for a subset of the firms in our sample that produce a standalone CSR report, we do have the specific month in which that report is made publicly available. Therefore, for these firms, we can test whether the announcement of CSR initiatives coincides with short-term returns (consistent with signaling) or long term returns (consistent with investment).

The results of our return window tests are provided in Table 7. In column 1, we find a positive and significant coefficient on excess CSR consistent with signaling, and an insignificant coefficient on predicted CSR, which is inconsistent with investment. The returns in column 1 are for the three month period following the release of the corporate accountability report. The release dates are distributed throughout the fiscal year. In column 2, we conduct the same test using returns for the three month period that begins three months after the release of the corporate accountability report. In this case, neither of our coefficients are significant, indicating that the returns to the information provided in the corporate accountability report occurred in the three month period immediately following the release of the report. These findings provide additional support for the hypothesis that CSR investments are done for signaling rather than investment purposes.

A frequent issue in the signaling literature is why a firm chose to signal through the specific mechanism under study, and whether a firm uses the mechanism not to signal the future prospects of the firm, but rather to cater to and hence attract the type of investor that has a preference for the signaling mechanism. Catering is generally defined as the managerial behavior

of increasing the supply of a characteristic that investors appear to be paying a premium for, even though that characteristic does not increase fundamental value (Baker et al, 2009). In the case of CSR, this would be consistent with investors' willingness to pay more for the shares of a firm that is socially responsible. It is worth noting that catering is still consistent with our view of signaling. We define signaling as an action that does not create shareholder value, but rather, as an action that attracts investors because of the implications of excess CSR investment on future performance. Under the catering view, it is just that the firm is signaling that it is a "socially responsible" firm as opposed to a "profitable" one.

We test both of these issues in Table 8. To test whether CSR is a substitute or a complement to other types of signals, we re-estimate the returns regressions in Table 6 including the change in the dividend payment per share as an additional control variable. The results are shown in Column 1-2 of Table 8, Panel A. The coefficients on predicted and excess CSR investment are unchanged. In addition, the coefficient on the change in the dividend payment per share is positive and significant. This confirms that the signaling we document for CSR investments is not substituting for dividends. Furthermore, these results are consistent with firms using CSR investments as an additional signaling mechanism in addition to changes in dividend payments.

The results in Columns 1-2 of Table 6 are inconsistent with the catering story, since there is an improvement in accounting based measures of performance in future periods. However, that does not necessarily imply that our results in Column 3 of Table 6 are not partially impacted by catering behavior. To test whether firms are signaling improvements in future performance versus signaling social responsibility we re-estimate our results in Table 6 and Table 7 and include a variable that proxies for the demand for the firm's shares from CSR focused

institutional investors. Specifically, we include the change in the percentage of a firm's shares that are held by socially responsible mutual funds to total institutional holdings as an additional control variable.

The results are shown in Column 1-3 of Table 8, Panel B. In the test of annual returns in column 1 we find a positive and significant coefficient on excess CSR. Consistent with Table 7, we also find that the coefficient on excess CSR is positive and significant when we focus on returns for the three month period following the release of a corporate accountability report, and insignificant when we focus on returns for the three month period that begins three months after the release of a corporate accountability report. These results are consistent with firms signaling future performance, rather than signaling firm type. However, the coefficient on DPST is positive and highly significant in column 2, indicating that short window returns are driven in part by the catering explanation.

Our next analysis examines the moderating impact of the type of CSR disclosure on the signal generated by CSR investments. Specifically, we consider whether having a standalone corporate accountability report, having that report follow the GRI sustainability reporting framework to allow for easier comparison with other companies, or having the report audited, are associated with higher levels of future financial performance. We do this by including interaction terms for each of these three measures of disclosure in equations (3a), (3b) and (3c). The results, presented in Table 9, do not provide any evidence that these reporting choices impact the value of the signal.

The results for the specification using *ROA* and *SAR* as the measure of firm performance have insignificant coefficients for each of the interaction terms. The coefficients on the specification using *CFO* are also insignificant, with the exception of the specification that uses

an indicator for the presence of a standalone corporate accountability report. The coefficient on the interacted fitted value is positive, indicating that for two firms that both invest the predicted amount in CSR initiatives, the firm that issues a standalone report has better performing CSR investments than the firm which does not issue a report.

We conduct a series of robustness tests to verify our results. First, we use three other measures of firm performance—Return on Equity (“*ROE*”), Profit Margin (“*PM*”), and Asset Turnover (“*ATO*”). We use *ROE* as it is the second most common accounting measure after *ROA* in the papers we survey. We use *PM* and *ATO* because they are the constituent parts of *ROA*, and because some papers that examine the relation between CSR investment and firm performance use *PM*. These tests do not provide any additional insights. The coefficient on the excess CSR investment in equation (3) using *ROE* as the measure of firm performance is positive and significant. Unlike the regressions of equations (3a), (3b) and (3c), the coefficient on the predicted value of CSR investment is positive and significant. Overall, these results are consistent with the signaling hypothesis, although the positive coefficient on the fitted value suggests that the conclusion is not as clear as it is with our other specifications. We find no significant results using *PM* or *ATO* as the measure of firm performance.

We also split our sample based on the level of excess CSR investment to test whether firms with higher levels of excess CSR investment also have improvements in financial performance that are disproportionately higher. We re-estimate equations (3a), (3b) and (3c) after including interaction terms for firms in the highest versus the lowest decile, and separately the highest versus the lowest quartile of the residual. We are unable to reject the hypothesis that the coefficients in these models are any different than those in the base groups in equations (3a), (3b) and (3c). In other words, we don’t find any support for the hypothesis that firms with the largest

residuals experience a greater rate of increase in firm performance. Rather, the change in firm financial performance for a given level of excess CSR investment is the same for these firms as it is for firms with lower levels of excess CSR investment.

Our final analysis considers the possibility that CSR expenditures may have different attributes for different firms. Even though our research design allows us to concurrently test the different hypotheses, our conclusions are based on the dominant explanation—that is, on average, CSR appears to act as a signaling mechanism. It is possible that there is a subset of firms where the coefficient on the predicted CSR is also positive (i.e. that the investment hypothesis holds), and a subset where the coefficient on the excess CSR is insignificant (i.e. the signaling hypothesis does not hold). We test for this possibility by identifying and separately testing those firms in our sample that are most likely to have investment based CSR expenditures and those that are most likely to have signaling based CSR expenditures. More specifically, we split our sample as shown in the Figure 1 below:

		<i>Predicted CSR Expenditures</i>	
		High	Low
<i>Excess CSR Expenditures</i>	High		(LH) Signaling Firms
	Low	(HL) Investment Firms	

Figure 1: Identification of Signaling and Investment Firm Subsamples

Our intuition is as follows. Firms with high levels of CSR expenditures, and whose expenditures can be explained by CSR-based factors (i.e. HL firms), are more likely to be undertaking CSR expenditures that are consistent with the investment hypothesis. On the contrary, firms with high levels of CSR expenditures, and whose expenditures cannot be explained by CSR-based factors (i.e. LH firms) are more likely to be undertaking CSR

expenditures that are consistent with the signaling hypothesis. The results in Table 10 confirm this intuition. For ease of comparison, the results for our full sample are provided in column 1. We do not find support for the investment hypothesis in column 2, as the coefficient on predicted CSR is negative and marginally significant. In untabulated results, we document a positive and significant coefficient on predicted CSR in regressions where the dependent variable is either *ROA* or *CFO*. This suggests that CSR investments may create shareholder value, but that the overall value creation does not satisfy the firms cost of capital. On the contrary, we find additional support for the signaling hypothesis. The coefficient on excess CSR for the signaling subset in column 3 is positive and significant. Overall, we find some support for the notion that different firms undertake CSR investments for different reasons. However, we find the strongest support for the signaling hypothesis.

6. Summary and Conclusion

Our findings are contrary to a large majority of the studies that examine the link between CSR investments and future firm performance, even though our initial empirical results mirror those documented by these studies. While we find a positive association between financial performance and CSR investments, we find that the source of the positive association is more likely due to the signaling value of CSR investments than positive returns on those investments. From a causality perspective, we conclude that current-period CSR investments do not cause improvements in firms' future performance, but rather that the anticipation of future financial performance causes firms to undertake CSR investments in the current period.

Appendix A: Variable Description and Data Sources

Specifications of variables used throughout the paper. Table A1 Panels A, B and C describe the CSR investment, corporate accountability reporting, and other variables, respectively.

Table A1

Variable	Description	Data Source
Panel A: CSR Investment Variables		
CGVSCORE	Corporate governance score	Asset4
CSR	Asset4 2-Factor CSR score; includes social and environment factors	Asset4
ENVSCORE	Environmental score	Asset4
SOCSCORE	Social score	Asset4
Panel B: Corporate Accountability Reporting Variables		
CSRAUDIT	Binary variable takes the value of 1 if the firm produces an audited standalone CSR report	Asset4
CSRGRI	Binary variable takes the value of 1 if the firm's CSR report follows GRI guidelines	Corporate Register.com
CSRREPORT	Binary variable takes the value of 1 if the firm produces a standalone CSR report	Asset4
Panel C: Other Variables		
ADVERTISING	Advertising expense scaled by net sales for fiscal year t	Compustat
ATO	Net sales divided by total assets, measured at the end of fiscal year t	Compustat
CASH	Cash scaled by total assets, measured at the end of fiscal year t	Compustat
CFO	Cash flow from operations (calculated using the indirect method) divided by total assets, measured at the end of fiscal year t	Compustat
LEVERAGE	Sum of long-term debt and debt in current liabilities divided by total assets, measured at the end of fiscal year t	Compustat
LITIGATION	Litigation expense scaled by net sales for fiscal year t	Asset4 & Compustat
MTB	Sum of market value of equity, long-term debt, debt in current liabilities, liquidation value of preferred stock and deferred taxes and investment credit divided by total assets, measured at the end of fiscal year t	Compustat
PM	Income before extraordinary items divided by net sales for fiscal year t	Compustat
RD	Research and development expense scaled by net sales for fiscal year t	Compustat
ROA	Income before extraordinary items divided by total assets, measured at the end of fiscal year t	Compustat
SAR	Raw return minus the return of the corresponding size-decile index, measured over fiscal year t	CRSP
SIZE	Natural logarithm of total assets, measured at the end of fiscal year t	Compustat

Appendix B - Description of ASSET4 Categories (from ASSET4 documents)

Environmental Performance Pillar

- **Resource Reduction**: The resource reduction category measures a company's management commitment and effectiveness towards achieving an efficient use of natural resources in the production process. It reflects a company's capacity to reduce the use of materials, energy or water, and to find more eco-efficient solutions by improving supply chain management.
- **Emission Reduction**: The emission reduction category measures a company's management commitment and effectiveness towards reducing environmental emission in the production and operational processes. It reflects a company's capacity to reduce air emissions (greenhouse gases, F-gases, ozone-depleting substances, NOx and SOx, etc.), waste, hazardous waste, water discharges, spills or its impacts on biodiversity and to partner with environmental organizations to reduce the environmental impact of the company in the local or broader community.
- **Product Innovation**: The product innovation category measures a company's management commitment and effectiveness towards supporting the research and development of eco-efficient products or services. It reflects a company's capacity to reduce the environmental costs and burdens for its customers, and thereby creating new market opportunities through new environmental technologies and processes or eco-designed, dematerialized products with extended durability.

Social Performance Pillar

- **Employment Quality**: The workforce / employment quality category measures a company's management commitment and effectiveness towards providing high-quality employment benefits and job conditions. It reflects a company's capacity to increase its workforce loyalty and productivity by distributing rewarding and fair employment benefits, and by focusing on long-term employment growth and stability by promoting from within, avoiding lay-offs and maintaining relations with trade unions.
- **Health and Safety**: The workforce / health & safety category measures a company's management commitment and effectiveness towards providing a healthy and safe workplace. It reflects a company's capacity to increase its workforce loyalty and productivity by integrating into its day-to-day operations a concern for the physical and mental health, well being and stress level of all employees.
- **Training and Development**: The workforce / training and development category measures a company's management commitment and effectiveness towards providing training and development (education) for its workforce. It reflects a company's capacity to increase its intellectual capital, workforce loyalty and productivity by developing the workforce's skills, competences, employability and careers in an entrepreneurial environment.
- **Diversity and Opportunity**: The workforce / diversity and opportunity category measures a company's management commitment and effectiveness towards maintaining diversity and equal opportunities in its workforce. It reflects a company's capacity to increase its workforce loyalty and productivity by promoting an effective life-work balance, a family friendly environment and equal opportunities regardless of gender, age, ethnicity, religion or sexual orientation.
- **Human Rights**: The society / human rights category measures a company's management commitment and effectiveness towards respecting the fundamental human rights conventions. It reflects a company's capacity to maintain its license to operate by guaranteeing the freedom of association and excluding child, forced or compulsory labor.
- **Community**: The society / community category measures a company's management commitment and effectiveness towards maintaining the company's reputation within the general community (local, national and global). It reflects a company's capacity to maintain its license to operate by being a good citizen (donations of cash, goods or staff time, etc.), protecting public health (avoidance of industrial accidents, etc.) and respecting business ethics (avoiding bribery and corruption, etc.).
- **Customer / Product Responsibility**: The customer / product responsibility category measures a company's management commitment and effectiveness towards creating value-added products and services upholding the customer's security. It reflects a company's capacity to maintain its license to operate by producing quality goods and services integrating the customer's health and safety, and preserving its integrity and privacy also through accurate product information and labeling.

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Table 1: Sample Composition

Panel A: Breakdown by Year

<i>Year</i>	<i>Firm-Years</i>	<i>%</i>
2002	434	6.9
2003	435	6.9
2004	601	9.6
2005	671	10.7
2006	672	10.7
2007	679	10.8
2008	859	13.7
2009	967	15.4
2010	967	15.4
Total	6,285	100.0%

Panel B: Breakdown by Industry

<i>1-digit SIC</i>	<i>Description</i>	<i>Firm-Years</i>	<i>%</i>
0	Agriculture, Forestry, and Fisheries	11	0.2
1	Mineral and Construction	367	6.1
2	Manufacturing	1,080	17.8
3	Manufacturing	1,343	22.2
4	Transportation, Communications, and Utilities	787	13.0
5	Whole Trade and Retail Trade	585	9.7
6	Finance, Insurance and Real Estate	1,145	18.9
7	Service Industries	549	9.1
8	Service Industries	158	2.6
9	Public	30	0.5
Total		6,055	100.0%

Table 2: Descriptive Statistics

Descriptive statistics of the variables used in the regression analyses. All variables are defined in Appendix A.

	<i>N</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>P25</i>	<i>Median</i>	<i>P75</i>	<i>Max</i>
<i>CSR Variables:</i>								
CSR	6,285	0.41	0.27	0.07	0.18	0.32	0.63	0.98
ENVSCORE	6,285	0.39	0.30	0.09	0.15	0.21	0.67	0.97
SOCSCORE	6,285	0.44	0.28	0.04	0.18	0.37	0.68	0.99
CGVSCORE	6,285	0.73	0.17	0.02	0.65	0.77	0.85	0.98
CSRREPORT	6,285	0.18	0.39					
CSRAUDIT	6,285	0.03	0.18					
CSRGRI	6,285	0.05	0.22					
<i>Other Variables:</i>								
ROA	5,958	0.05	0.07	-0.36	0.01	0.05	0.09	0.26
ΔROA_{t+1}	4,811	0.00	0.04	-0.19	-0.01	0.00	0.02	0.20
CFO	4,722	0.09	0.09	-0.35	0.05	0.09	0.14	0.36
ΔCFO_{t+1}	3,811	0.00	0.08	-0.29	-0.04	0.00	0.04	0.29
SAR	5,798	0.05	0.34	-0.69	-0.16	0.01	0.20	2.17
ATO	5,963	0.80	0.63	0.05	0.35	0.67	1.07	3.61
PM	5,983	0.07	0.15	-1.38	0.03	0.07	0.13	0.43
CASH	5,857	0.09	0.09	0.00	0.02	0.06	0.13	0.47
LEVERAGE	5,992	0.25	0.18	0.00	0.11	0.23	0.36	0.87
MTB	5,080	1.65	1.13	0.17	0.93	1.30	1.97	8.54
SIZE	5,980	8.99	1.30	5.21	8.03	8.87	9.83	13.09
RD	6,041	0.03	0.07	0.00	0.00	0.00	0.02	0.67
ADVERTISING	6,005	0.01	0.02	0.00	0.00	0.00	0.01	0.13
LITIGATION	6,141	0.00	0.00	0.00	0.00	0.00	0.00	0.02

Table 3: Correlation Matrix of CSR Investment and Corporate Accountability Reporting Variables

Pair-wise Pearson correlations of the variables. All variables are defined in Appendix A.

	<i>CSR</i>	<i>ENVSCORE</i>	<i>SOCSCORE</i>	<i>CGVSCORE</i>	<i>CSRREPORT</i>	<i>CSRAUDIT</i>	<i>CSRGRI</i>
CSR	1.000						
ENVSCORE	0.935	1.000					
SOCSCORE	0.926	0.731	1.000				
CGVSCORE	0.485	0.446	0.457	1.000			
CSRREPORT	0.574	0.568	0.498	0.355	1.000		
CSRAUDIT	0.291	0.290	0.251	0.173	0.280	1.000	
CSRGRI	0.368	0.356	0.328	0.213	0.493	0.373	1.000
ROA	0.100	0.068	0.120	0.058	0.021	0.039	0.057
ΔROA_{t+1}	-0.001	0.015	-0.017	-0.012	-0.007	0.019	0.000
CFO	0.051	0.017	0.080	0.026	0.007	0.036	0.033
ΔCFO_{t+1}	-0.004	0.003	-0.010	-0.005	-0.016	-0.004	-0.001
SAR	-0.010	-0.006	-0.013	-0.024	-0.012	0.004	0.025
ATO	0.109	0.096	0.108	0.077	0.055	0.005	-0.014
PM	0.039	0.016	0.058	0.038	0.001	0.015	-0.011
CASH	-0.032	-0.018	-0.042	-0.013	-0.036	0.004	0.028
LEVERAGE	-0.026	0.014	-0.064	-0.009	0.026	0.001	0.002
MTB	-0.054	-0.079	-0.021	-0.055	-0.112	-0.003	0.009
SIZE	0.392	0.325	0.406	0.164	0.233	0.161	0.011
RD	0.064	0.079	0.040	0.042	-0.032	-0.010	-0.033
ADVERTISING	0.112	0.087	0.123	0.018	0.018	0.057	0.143
LITIGATION	0.055	0.054	0.048	0.042	0.021	0.025	-0.001

Table 4: Subsequent Firm Performance on CSR Investment

Results from an OLS estimation where the dependent variables are proxies for subsequent firm performance and the independent variables are the various CSR investment and control variables. All variables are defined in Appendix A. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively, using a two-tailed test and standard errors clustered by firm.

	(1) ΔROA_{t+1}	(2) ΔCFO_{t+1}	(3) SAR_{t+1}	(4) ΔROA_{t+1}	(5) ΔCFO_{t+1}	(6) SAR_{t+1}
<i>CSR Investments:</i>						
CSR	0.004** (2.02)	0.012*** (2.78)	0.018 (0.99)			
ENVSCORE				-0.000 (-0.06)	-0.003 (-0.51)	0.009 (0.37)
SOCSCORE				0.003 (1.27)	0.016*** (2.80)	0.027 (1.15)
CGVSCORE				0.000 (0.10)	-0.005 (-0.61)	-0.028 (-0.85)
<i>Corporate Accountability Reporting:</i>						
CSRREPORT				0.000 (0.03)	-0.001 (-0.17)	-0.003 (-0.16)
CSRAUDIT				0.005 (1.57)	0.004 (0.56)	-0.006 (-0.23)
CSRGRI				-0.000 (-0.06)	-0.001 (-0.19)	-0.033 (-1.34)
<i>Control Variables:</i>						
ROA _{t-1}	-0.241*** (-14.47)			-0.242*** (-14.48)		
ΔROA_t	-0.365*** (-15.58)			-0.365*** (-15.59)		
CFO _{t-1}		-0.485*** (-20.03)			-0.487*** (-20.02)	
ΔCFO_t		-0.655*** (-32.79)			-0.656*** (-32.63)	
Industry- and Year-Fixed Effects	Included	Included	Included	Included	Included	Included
R ²	0.1896	0.3173	0.0313	0.1902	0.3180	0.0319
N	4,640	3,646	4,854	4,640	3,646	4,854

Table 5: Economic and Institutional Determinants of Firm's CSR Investment

Results from an OLS estimation where the dependent variable is the level of firm's CSR investment and the independent variables are the various economic and institutional characteristics of the firm. All variables are defined in Appendix A. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively, using a two-tailed test and standard errors clustered by firm.

	(1) CSR	(2) CSR	(3) CSR	(4) CSR
ROA	0.225** (2.26)		0.314*** (2.74)	
ATO		0.055*** (4.62)		0.072*** (5.08)
PM		0.023 (0.48)		0.049 (0.93)
CASH	0.088 (1.29)	0.028 (0.43)	0.107 (1.34)	0.030 (0.39)
CFO	0.060 (0.94)	0.122** (1.98)	0.084 (1.15)	0.163** (2.40)
LEVERAGE	-0.069* (-1.78)	-0.053 (-1.36)	-0.083* (-1.89)	-0.060 (-1.36)
MTB	0.014** (2.18)	0.020*** (3.43)	0.009 (1.17)	0.017** (2.49)
SIZE	0.122*** (22.19)	0.124*** (22.73)	0.144*** (23.88)	0.146*** (24.43)
RD	0.072 (0.81)	0.173* (1.87)	0.141 (1.48)	0.273*** (2.72)
ADVERTISING	0.281 (1.12)	0.369 (1.48)	0.205 (0.66)	0.324 (1.05)
LITIGATION	-1.008 (-0.41)	-0.368 (-0.15)	-1.193 (-0.45)	-0.360 (-0.14)
CGVSCORE	0.595*** (17.63)	0.584*** (17.24)		
Constant	-1.191*** (-20.08)	-1.257*** (-21.26)	-0.972*** (-11.34)	-1.063*** (-12.58)
Industry- and Year-Fixed Effects	Included	Included	Included	Included
R ²	0.5193	0.5260	0.4111	0.4222
N	3,895	3,895	3,895	3,895

Table 6: Subsequent Firm Performance on Predicted and Excess CSR Investment

Results from an OLS estimation where the dependent variables are proxies for subsequent firm performance and the independent variables are the predicted and excess CSR investment and control variables. PREDICTEDCSR and EXCESSCSR are the fitted values and residual values from the determinants model presented in column (2) of Table 5. All other variables are defined in Appendix A. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively, using a two-tailed test and standard errors clustered by firm.

	(1) ΔROA_{t+1}	(2) ΔCFO_{t+1}	(3) SAR_{t+1}
<i>CSR Investments:</i>			
PREDICTEDCSR	0.006 (1.38)	0.009 (1.31)	-0.091*** (-2.79)
EXCESSCSR	0.008** (2.35)	0.015** (2.38)	0.125*** (4.02)
<i>Control Variables:</i>			
ROA_{t-1}	-0.260*** (-13.48)		
ΔROA_t	-0.367*** (-13.77)		
CFO_{t-1}		-0.501*** (-19.65)	
ΔCFO_t		-0.662*** (-29.92)	
Industry- and Year-Fixed Effects	Included	Included	Included
R^2	0.1968	0.3223	0.0387
N	3,081	3,048	3,103

Table 7: Effect of Return Window on Predicted and Excess CSR Investment

Results from an OLS estimation where the dependent variable is Size Adjusted Return and the independent variables are the predicted and excess CSR investment and control variables. The Size Adjusted Return in Column (1) is for the three month period following the release of a standalone Corporate Accountability Report. The Size Adjusted Return in Column (2) is for the three month period that begins three months after the release of a standalone Corporate Accountability Report. PREDICTEDCSR and EXCESSCSR are the fitted values and residual values from the determinants model presented in column (2) of Table 5. All other variables are defined in Appendix A. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively, using a two-tailed test and standard errors clustered by firm.

	(1)	(2)
	SAR _(t,t+1/4)	SAR _(t+1/4,t+1/2)
<i>CSR Investments:</i>		
PREDICTEDCSR	0.016 (0.32)	-0.023 (-0.51)
EXCESSCSR	0.113* (1.95)	-0.049 (-1.13)
Industry- and Year-Fixed Effects	Included	Included
R ²	0.0830	0.0634
N	302	302

Table 8: Nature of CSR Signal

Results from an OLS estimation where the dependent variables are proxies for subsequent firm performance and the independent variables are the predicted and excess CSR investment and control variables. PREDICTEDCSR and EXCESSCSR are the fitted values and residual values from the determinants model presented in column (2) of Table 5. Panel A includes DDPS, the change in the dividend payment per share for the current period. Panel B includes DPST, the change in the percentage holdings of socially responsible mutual funds relative to total institutional holdings. All other variables are defined in Appendix A. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively, using a two-tailed test and standard errors clustered by firm.

Panel A: CSR Signal and Changes in Dividend Payments

	(1) ΔROA_{t+1}	(2) ΔCFO_{t+1}
<i>CSR Investments:</i>		
PREDICTEDCSR	0.008* (1.65)	0.008 (1.03)
EXCESSCSR	0.010** (2.66)	0.018*** (2.89)
DDPS _t	0.005*** (2.62)	0.017*** (4.41)
<i>Control Variables:</i>		
ROA _{t-1}	-0.288*** (-11.54)	
ΔROA_t	-0.389*** (-12.56)	
CFO _{t-1}		-0.484*** (-14.79)
ΔCFO_t		-0.671*** (-27.02)
Industry- and Year-Fixed Effects	Included	Included
R ²	0.2279	0.3257
N	2,021	2,001

Panel B: CSR Signal and Changes in Socially Responsible Institutional Holdings

	(1) SAR_{t+1}	(2) $SAR_{(t,t+1/4)}$	(3) $SAR_{(t+1/4,t+1/2)}$
<i>CSR Investments:</i>			
PREDICTEDCSR	-0.093*** (-2.86)	-0.000 (-0.00)	-0.007 (-0.17)
EXCESSCSR	0.114*** (3.63)	0.107* (1.80)	-0.045 (-1.02)
<i>Control Variables:</i>			
DPST _t	0.196 (0.44)	1.285*** (3.08)	-0.864*** (-2.68)
Industry- and Year-Fixed Effects	Included	Included	Included
R ²	0.0360	0.0965	0.0674
N	3,054	295	295

Table 9: Impact of Corporate Accountability Reporting on Subsequent Firm Performance

Results from an OLS estimation where the dependent variables are proxies for subsequent firm performance and the independent variables are the various CSR investment, corporate accountability reporting and control variables. All variables are defined in Appendix A. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively, using a two-tailed test and standard errors clustered by firm.

	(1) ΔROA_{t+1}	(2) ΔROA_{t+1}	(3) ΔROA_{t+1}	(4) ΔCFO_{t+1}	(5) ΔCFO_{t+1}	(6) ΔCFO_{t+1}	(7) SAR_{t+1}	(8) SAR_{t+1}	(9) SAR_{t+1}
<i>CSR Investments:</i>									
PREDICTEDCSR	0.003 (0.59)	0.004 (0.95)	0.005 (1.16)	0.004 (0.50)	0.007 (0.97)	0.008 (1.11)	-0.092** (-2.46)	-0.091*** (-2.65)	-0.087** (-2.49)
EXCESSCSR	0.008* (1.95)	0.008** (2.23)	0.007** (2.10)	0.018** (2.48)	0.016** (2.55)	0.015** (2.37)	0.127*** (3.66)	0.125*** (3.95)	0.127*** (3.96)
<i>Corporate Accountability Reporting:</i>									
CSRREPORT	-0.009 (-1.13)			-0.028** (-2.29)			-0.119 (-1.63)		
CSRAUDIT		0.015 (0.79)			0.013 (0.43)			-0.044 (-0.33)	
CSRGRI			-0.007 (-0.39)			-0.042 (-1.44)			-0.177 (-1.15)
<i>Interaction Terms:</i>									
PREDICTED*CAR	0.015 (1.35)	-0.010 (-0.43)	0.011 (0.46)	0.044*** (2.62)	-0.002 (-0.05)	0.053 (1.55)	0.146 (1.43)	0.051 (0.32)	0.181 (1.01)
EXCESS*CAR	0.003 (0.22)	-0.021 (-1.05)	0.016 (0.60)	-0.000 (-0.02)	-0.061 (-1.58)	0.035 (0.84)	0.108 (1.14)	0.052 (0.28)	0.209 (0.87)
<i>Control Variables:</i>									
ROA _{t-1}	-0.260*** (-13.48)	-0.260*** (-13.45)	-0.260*** (-13.45)						
ΔROA_t	-0.367*** (-13.78)	-0.366*** (-13.75)	-0.367*** (-13.77)						
CFO _{t-1}				-0.502*** (-19.86)	-0.503*** (-19.73)	-0.501*** (-19.70)			
ΔCFO_t				-0.663*** (-29.96)	-0.663*** (-29.92)	-0.662*** (-29.88)			
Industry- and Year-Fixed Effects	Included	Included	Included	Included	Included	Included	Included	Included	Included
R ²	0.1973	0.1975	0.1970	0.3235	0.3230	0.3226	0.0395	0.0387	0.0390
N	3,081	3,081	3,081	3,048	3,048	3,048	3,103	3,103	3,103

Table 10: Prevalence of Signaling versus Investment Explanations for CSR Investment

Results from an OLS estimation where the dependent variables are proxies for subsequent firm performance and the independent variables are the predicted and excess CSR investment and control variables. PREDICTEDCSR and EXCESSCSR are the fitted values and residual values from the determinants model presented in column (2) of Table 5. Column (1) includes the full sample. Column (2) only includes investment firms, which are those firms with both predicted CSR investment above the median and excess CSR investment below the median of all the firms in our sample. Column (3) only includes signaling firms, which are those firms with both predicted CSR investment below the median and excess CSR investment above the median of all the firms in our sample. All other variables are defined in Appendix A. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively, using a two-tailed test and standard errors clustered by firm.

	(1) SAR _{t+1}	(2) SAR _{t+1}	(3) SAR _{t+1}
<i>CSR Investments:</i>			
PREDICTEDCSR	-0.097*** (-2.99)	-0.125 (-1.60)	0.040 (0.34)
EXCESSCSR	0.112*** (3.56)	0.120 (0.72)	0.146** (2.06)
Industry- and Year-Fixed Effects	Included	Included	Included
R ²	0.0375	0.0362	0.0528
N	3,068	629	671