

INCAS

DP Series

Discussion Paper Series 2017 #01

Institutional investors, corporate social responsibility, and stock price performance

Elizabeth Motta

*Graduate School of Economics, Kyushu University
6-19-1, Hakozaki, Higashiku Fukuoka 812-8581 JAPAN*

Konari Uchida**

*Faculty of Economics, Kyushu University
6-19-1, Hakozaki, Higashiku Fukuoka 812-8581 JAPAN*

Preliminary Version

This work has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 645763.

INCAS

Understanding institutional change in Asia: a comparative perspective with Europe

<http://incas.hypotheses.org/>



ABOUT THE INCAS PROJECT

INCAS is a Marie Skłodowska-Curie Actions R.I.S.E funded project under the European Commission's H2020 Programme.

The project INCAS aims at creating a top-level research and advanced training network on institutional change in Asia, in comparative perspective with Europe.

The coordinator, Ecole des Hautes Etudes en Sciences Sociales (France), promotes this network together with Oxford University (UK), Freie Universität Berlin (Germany), and in collaboration with Waseda University (Japan). The aim of the proposed mobility scheme is to give birth to a European consortium and network of faculties and advanced graduate students specialized in the comparative analysis of institutional change in Asia and Europe. The partners have chosen Japan as a reference point because of its comparability with Europe as shown by previous studies, its historical influence on development and further institutional changes in Asia, and the expertise accumulated within our research team.

Analyzing current economic dynamics in Japan and later expanding this analysis to other Asian countries promises to generate insights that might be help to better understand challenges for Europe and to prepare relevant policy proposals. Our purpose is to compare the results obtained in the case of Japan and few other Asian countries (South Korea, Taiwan, China, and possibly Thailand, after having checked the data availability), not only to previous results on Europe but also to original results we will get on European countries (primarily France – which will be our reference country in Europe – and then the UK, Germany, and Italy) in mobilizing new historical data and applying our theoretical framework.

Institutional investors, corporate social responsibility, and stock price performance*

Elizabeth Motta
Graduate School of Economics, Kyushu University
6-19-1, Hakozaki, Higashiku Fukuoka 812-8581 JAPAN

Konari Uchida**
Faculty of Economics, Kyushu University
6-19-1, Hakozaki, Higashiku Fukuoka 812-8581 JAPAN

Preliminary Version

Abstract

The launch of the United Nations Global Compact Principles for Responsible Investment (PRI) in 2006 prompted the Japanese government to emphasize corporate social responsibility (CSR) in investment policies and put pressure on institutional investors to monitor environmental and social performance. We find that institutional ownership is positively related to the probability of improved social performance as measured by CSR ratings in the environment category for Japanese firms. Conversely, we find that these ownership variables are not significantly related to the likelihood of improved social performance as measured by ratings for social engagement, corporate governance, or employee relations. Improved ratings in the environment category do not generate excess stock returns in the period following the PRI launch. These results suggest that soft law aimed at institutional investors can enhance responsible business practices without destroying shareholder value, and that national government initiatives are an effective supplement to guidelines established by international organizations. We provide evidence of the influence of shareholder preference on CSR, and further contribute to the debate on the relation between corporate social and financial performance, in a research setting less vulnerable to endogeneity and reverse causality problems than other similar studies.

Keywords: Corporate social responsibility; institutional ownership; shareholder preference; Principles for Responsible Investment; stock price performance

* We are grateful for financial supported provided by JSPS KAKENHI Grant Number 15H03367 and JSPS Core-to-Core Program (A. Advanced Research Networks).

** Corresponding author. Faculty of Economics, Kyushu University 6-19-1, Hakozaki, Higashiku, Fukuoka 812-8581 JAPAN.
Tel.: +81-92-642-2463 E-mail: kuchida@econ.kyushu-u.ac.jp

1. Introduction

This paper attempts to investigate the effects of soft law aimed at institutional investors in advancing corporate social performance (CSP).¹ Growing public awareness of environmental and social issues, such as climate change and human rights, has led to a heightened demand for financial mechanisms that enhance responsible business practice. In 2006, the United Nations Global Compact officially launched the Principles for Responsible Investment (PRI), requiring institutional investors to introduce social and environmental issues into their ownership policies and decision-making. Early studies found a positive correlation between institutional ownership and social performance and good governance (Coffey and Fryxell, 1991; Graves and Waddock, 1994; Cox et al., 2004), but have not yet examined whether initiatives that set global standards for institutional investors can effectively improve CSP in investee companies.

One branch of CSR research analyzes how stakeholders affect CSP and indicates that shareholders, as one of the most influential stakeholders, have a significant influence on CSP. Large institutional investors such as CalPERS have recently started to demonstrate a commitment to CSR by investing in socially responsible companies and we therefore expect the preference of shareholders, specifically large institutional investors, to have a strong influence on CSP. Empirical studies that examine how institutional ownership affects CSP may be subject to endogeneity problems and reverse causality problems, and therefore have not reached a definitive conclusion on the direction of relation due to these concerns. The launch of the PRI is an exogenous event that increased institutional investor preference for CSR policies. By investigating the relation between institutional ownership and CSP after the launch of the PRI, we reduce the endogeneity and reverse causality concerns inherent in CSR research.

We further contribute to the long-held debate on the relation between CSP and corporate financial performance (CFP) in our analysis. Friedman's (1962) pragmatic assertion that "few trends could so thoroughly undermine the very foundations of our free society as the acceptance by corporate officials of a social responsibility other than to make as much money for their stockholders as possible," is frequently cited as the main theoretical argument against CSR (Teraji, 2009; Schaefer, 2008). CSR proponents argue that socially responsible activities generate substantial advantages such as goodwill and new market opportunities (Guenster et al., 2011), and firms that ignore CSR destroy long-run shareholder value due to loss of reputation and litigation risk. Existing empirical research on how CSP affects CFP is likely subject to endogeneity and reverse causality concerns. We view the shift in CSR ratings after the launch of the PRI, an exogenous event for investee firms, as attributable to changes in institutional shareholder preference for CSR activities. We also reexamine the CSP-CFP relation by investigating the characteristics of stock returns for companies that improved CSR ratings after the launch of the PRI.

We choose to analyze the relation between institutional ownership and CSP in Japanese firms because of the effective role that the Japanese government plays in introducing policy change. The PRI covers all aspects of CSR including environmental protection, social engagement, corporate governance, and human rights. We consider the role of the Japanese government (Ministry of Environment) in diffusing the PRI to institutional investors with specific emphasis on the environmental protection aspect of CSR.² We are therefore able to distinguish between improved CSP caused by changes in institutional investor preference and improved CSP caused by omitted variables. Analyzing Japanese data allows us to examine the role that national government actions play in promoting soft law initiated by international organizations to improve business practices.

The results of our analysis indicate a positive relationship between institutional ownership and the probability of improved ratings in the environmental protection category. In contrast, institutional ownership has no significant impact on the likelihood of improved ratings in the categories of social engagement, corporate governance, or employee relations. We find no significant excess stock returns for firms that improve ratings for environmental protection. These results suggest that the PRI improves business practices, at least to a certain degree, without harming shareholder wealth.

We contribute to the literature by providing evidence that shareholder preference can serve as an effective tool for international organizations to promote social business practices. The results suggest that national government measures play an important role in fostering initiatives put forth by international organizations to strengthen CSP. In addition to policy implications, we demonstrate the importance of shareholder preference as a determinant of CSP in a research setting less subject to endogeneity and reverse causality concerns. We also contribute to long-held debates on the CSP-CFP relation with analyses that mitigate methodological problems.

1. CSP is a term commonly used to describe the extent of a company's responsiveness to social policy and their effectiveness in implementing policy, and is likewise adopted in this study.

2. See UN Global Compact PRI website: <http://www.unpri.org/>

This paper proceeds as follows: The next section reviews related research in the field of CSR. Section 3 provides an overview of the exogenous event used in this study and presents the main hypothesis. Section 4 provides an overview of the sample period, data sources, and detailed descriptions of the variables used in the analyses. Section 5 provides the results and a detailed discussion about possible implications. The last section offers concluding remarks.

2. Literature review

2.1 Determinants of corporate social behavior and performance

The PRI focuses on shareholder preference as the main driver of CSR, and existing research in this field uses the stakeholder approach to explain the motivation for CSR (Van der Laan et al., 2008; Renneboog et al., 2008). Freeman (1984) was one of the first to establish the concept of the stakeholder as, “groups, organizations, or persons affected by the actions of a firm.” Stakeholders can be subdivided into primary stakeholders (employees, customers, and suppliers) and secondary stakeholders (local communities and local legislative government) based on their proximity to a firm’s business activities (Jensen, 2001; Clarkson, 1995; Hillman and Kleim, 2001). Dhaliwal et al. (2014) and Van der Laan et al. (2008) use company relations with primary stakeholders (e.g. employees) to explain driving factors of CSP and argue that propagating relationships with key stakeholder groups leads to long-term competitive advantages and improved CFP. Cheng et al. (2014), argue that the ability of a firm to satisfy multiple stakeholder groups has also been found to decrease the risk of financial decline.

An extension of stakeholder theory by Mitchell et al. (1997) proposes that, in addition to being classified by their proximity to a firm’s business transactions, stakeholders can be divided based on the distribution of three key attributes: power, legitimacy, and urgency. High salience stakeholders are those that have the power to reward or punish a company based on its response to their claims. The rules used to subdivide stakeholders can also be applied to shareholders in terms of power, legitimacy, and urgency (Jensen, 2001; Barnea and Rubin, 2010). Mitchell et al. (1997) indicate that shareholders possess the power to make urgent and legitimate claims, and therefore have the greatest influence over firm actions and decision-making processes. We interpret this as an indicator that shareholder preference significantly affects CSP.

The PRI highlights the role of institutional investors, a group of shareholders with large shareholdings and influence over firm decision-making, to advocate behaviors that improve CSP. Previous studies in corporate finance provide evidence that institutional investors monitor management and influence governance structures of investee firms (Aggarwal et al., 2011; Demiralp et al., 2011; Hartzell and Starks, 2003; Helwege et al., 2012; Shinozaki et al., 2015). However, no definitive conclusion has been reached on the direction or existence of a relation between institutional ownership and CSP. Assuming that the correlation between CSP and CFP is negative (positive), the presence of institutional investors with large shareholdings should lead to a reduction (increase) in CSR measures. Barnea and Rubin (2010) find a negative correlation between CSR expenditure and ownership of insiders (large blockholders and managers) but no correlation between CSP and institutional investors.

Recently, large institutional investors such as CalPERS, have started to publicize policies that promote CSR, and actively invest in socially responsible companies. Graves and Waddock (1994) find that institutional investors are favorably inclined toward companies with higher CSP when other factors are held constant and provide evidence of a positive correlation between improved CSP and institutional investment. Coffey and Fryxell (1991) examine the influence of institutional investors and find a positive relation between the percentage of institutional ownership and CSP when CSP is measured by representation of women on a board of directors. Cox et al. (2004) find that long-term institutional investment is positively related to CSP in a study that investigates the pattern of institutional shareholdings in the UK and their relationship to socially responsible behaviors.

2.2 The relation between corporate social and financial performance

Pava and Krausz (1996) provide a comprehensive review of papers published from 1972 to 1992 on the direct effects of CSP on CFP and indicate an overall insignificant or positive relation. Ruf et al. (2001) argue that changes in CSR ratings that occurred from 1991 to 1992 are positively related to sales growth from 1991 to 1993. Al-Tuwaijri et al. (2004) adopt a simultaneous regression approach to examine the links between corporate environmental disclosure, environmental performance, and CFP and find that environmental performance has a positive effect on CFP. Renneboog et al. (2008) also argue that CSR creates long-term shareholder value. Fisher-Vanden and Thorburn (2011), however, find that companies that announce enrollment in the EPA’s Climate Leaders program, a project that targets reductions

in greenhouse gas emissions, have significantly negative stock returns. McWilliams and Siegel (2001) suggest that a threshold level of engagement in CSR activities exists beyond which CSR is no longer beneficial. Jensen (2001) proposes an “enlightened stakeholder theory” that specifies that firms should seek to maximize long-term final market value.

Researchers have also examined whether CSP affects factors that are related to firm value. Suto and Takehara (2013) suggest a positive correlation between CSP and CFP in Japanese firms, and support the CSR risk-reduction hypothesis, which maintains that firms can reduce risk through CSR. El Ghoul et al. (2011) also indicate a positive correlation through evidence that the cost of equity capital is lower for high CSP firms than low CSP firms due to the relative size of a firm’s investor base and perceived risk.

3. Research design and hypothesis

Recent increased demand for voluntary public disclosure of firm investments and activities has prompted initiatives by international organizations such as the United Nations Environmental Programme Finance Initiative (UNEP FI), Global Reporting Initiative (GRI) and the United Nations Global Compact. The Global Compact was launched in 2000 with the intention of increasing corporate awareness and effectiveness in environment, social, and governance (ESG) issues.³ This paper focuses on the Global Compact Principles for Responsible Investment (PRI), developed by UN Secretary General Kofi Annan and a group of the world’s largest institutional investors in 2005, and officially launched in 2006.⁴ The PRI highlights the role of key institutional investors in ESG issues and emphasizes “active ownership,” that advises investors to use their rights acquired through shareholdings, and influence gained through visibility, to encourage companies to improve management systems, ESG performance, and reporting (Aust, 2013).

This paper investigates the effects of the PRI on CSP in Japanese companies. Although some researchers find a positive correlation between institutional ownership and CSP (Coffey and Fryxell, 1991; Graves and Waddock, 1994; Cox et al., 2004), few studies examine the effects of soft law established by international organizations on CSR through shareholder preference. This research will help create an empirical foundation for the construction of socially beneficial economic policy. Our results provide evidence on the relation between shareholder preference and CSP by mitigating the endogeneity problems that may lead to biased findings. A typical example of an endogeneity problem is that omitted (or unobservable) factors associated with CSR activities (e.g., firm reputation or social scrutiny) generate misleading results that show a correlation between the other variables under consideration.

CSR researchers utilize a variety of techniques to mitigate reverse causality problems including: analysis of change-and-change relations (Ruf et al., 2001), the simultaneous regression approach (Al-Tuwaijri et al., 2004), and event studies (Fisher-Vanden and Thorburn, 2011). This paper takes advantage of an exogenous shock that affects institutional investor preference and captures the pure effects of shareholder preference for CSR through changes in CSR ratings. Our analysis reduces endogeneity problems as we can assume that other firm characteristics (including unobserved) are unaffected by the exogenous shock. We also mitigate reverse causality concerns, as it would be extremely difficult for firms to change their ownership structures in anticipation of an exogenous shock. Following current methods in corporate governance research that simulate quasi-experimental research settings by adopting regulation changes (Black and Kim, 2012; Chhaochharia and Grinstein, 2007; Dahya and McConnell, 2007), we similarly simulate a quasi-experimental setting by adopting an exogenous shock to address endogeneity problems.

By creating an international discussion on ESG issues, the launch and distribution of the PRI generated a succession of national initiatives that work toward promoting CSR activities outlined in the PRI framework. Typical examples of actions categorized as CSR include voluntary community outreach, charitable donations, education promotion, environmental stewardship, and fair treatment of employees by an individual firm (Lin-Hi and Müller, 2013; Orlitzky and Benjamin, 2001). A unique characteristic of the dissemination of the PRI in Japan is the special focus on the environmental attribute of CSR. After the introduction of the PRI in early 2006, the Ministry of Environment set up the Round Table Conference on the Environment and Finance to discuss the role of businesses in protecting the environment. In May, the Development Bank of Japan (DBJ) held the PRI Press Conference in Tokyo further contributing to the increase in information transparency regarding effective means of advocating CSR after the PRI launch. In July, the Ministry of Environment created the report, “Expanding the Flow of Environmentally Conscious Money,” that outlines practical ways for businesses to combine “environmental power” and “financial power.”⁵ In August, the Minister of the Environment and the Financial Services Minister led discussions about CSR with private investors,

3. See UN Global Compact PRI website: <http://www.unpri.org/>

4. As of 2014, the UN Global Compact had a total of 7,000 corporate signatories in 135 countries.

5. See UN Global Compact PRI website: <http://www.unpri.org/>

corporate representatives, and security industry insiders at the Symposium on the Environment and Finance.⁶ The focus on the environmental protection attribute of CSR enables us to examine whether national governmental measures play a role in furthering initiatives by international organizations to increase CSR activities. Based on the aforementioned discussion, this paper tests the following hypothesis:

Hypothesis 1: Firms with higher percentages of ownership by institutional investors improved CSR ratings, especially in terms of environmental protection, following the launch of the UN Global Compact PRI and the Ministry of Environment Roundtables.

Contingent on proving Hypothesis 1, that a relation exists between institutional ownership and improved ratings in the environmental protection category, this study examines whether or not improvements in CSP are conducted at the expense of shareholder wealth. A possible alternative explanation for a relation between shareholders and financial performance is that firms with high institutional ownership sacrifice minority shareholder wealth in order to increase CSP for private interests. In this case, firms that improved CSR ratings would experience significantly negative stock returns. In contrast, if CSR improvements do not harm minority shareholder wealth, there should be no significant excess stock return. The second hypothesis takes the former view into account:

Hypothesis 2: Firms that improved CSR ratings in environmental protection following the PRI and the Japanese Ministry of Environment Roundtables experience negative excess returns.

Although a vast body of CSR literature examines the link between CSP and CFP, the analysis used in earlier studies may be subject to endogeneity and reverse causality issues. This study investigates whether stock prices are adversely affected by improved CSR ratings induced by an exogenous shock, the PRI and Japanese Ministry of Environment Roundtables. Our analysis contributes to the literature by examining the CSP-CFP relation and reduces endogeneity problems inherent in CSR research.

4. Sample selection and data

We use CSR ratings data for Japanese firms obtained from the Toyo Keizai CSR database as a proxy for CSP. Companies listed in the Toyo Keizai CSR database are rated on performance in four categories: *environment*, *social engagement*, *corporate governance*, and *employee relations*. The subdivision of CSR ratings into four categories allows us to examine the role that the national government plays in promoting CSR and determine if the government favors a specific category. Toyo Keizai scores performance in each of the four categories based on a five-score rating system: AAA represents the best performance, AA, A, B represent levels of possible improvement, C represents the worst performance, and – represents unreported ratings and therefore cannot be interpreted. All available ratings from 2007 to 2012 were collected and used in the empirical analysis.⁷ Examples of firms with high CSR ratings (AAA in all attributes) include internationally reputable companies such as the food additive provider Ajinomoto, the beer company Kirin Holdings Co., Ltd., and the automobile maker Toyota Motor Corporation.

Financial data for Japanese firms was collected from the Nikkei NEEDS Financial Quest database. Corporate governance data, including institutional ownership, was collected from the Nikkei NEEDS Cges database. This data was merged with the Toyo Keizai CSR rating data, and unlisted companies in the Toyo Keizai CSR database were eliminated from the analysis due to unavailable financial data. Companies that were not rated by Toyo Keizai for all three (five) years in the sample period were also eliminated from the final dataset.

We hypothesize that institutional investors pressure investee companies to increase CSR activities, especially environmental protection measures, after an exogenous shock in 2006: the launch of the PRI and the Japanese Ministry of Environment Roundtables. Assuming that effective CSP improvement takes time, this study designates 2007 as the starting year of the investigation, and 2007 (year t) CSR data is available in the 2008 (year $t + 1$) version of the data book.⁸ Since drastic changes in CSR ratings (e.g. from B to AA) are relatively rare, a binary variable ($D_IMPROVE$) is employed as the main variable to indicate firms that improve CSR ratings over the three- (five-) year period from 2007 to 2010 (2012) rather than the magnitude of the rating change (see Table 1 for definitions of variables).⁹

6. The symposium was sponsored by the Project for Dissemination of Securities Knowledge, and supported by the Ministry of Environment, the Japanese Bankers Association, and the Financial Services Agency.

7. The first Toyo Keizai CSR database book was published in 2006. The four rating categories were established and made available starting from the year 2006. The basic categories have remained the same for all years data is available but the grading criteria used to rate each category has increased in detail notably since 2006.

8. Toyo Keizai distributes surveys in July of each year and receives responses by September.

9. $D_IMPROVE$ is tested for all four CSR attributes in this study.

D_IMPROVE takes on a value of 1 if the firm is an improvement firm and a value of 0 if the firm is a no improvement firm. Separately, improvement firms are those that improve ratings over the three- (five-) year period from 2007 to 2010 (2012) and no improvement firms are those that experience a decline in, or have stable CSR ratings over the three (five) year period. Since this study focuses on whether the PRI and Japanese Ministry of Environment increase CSR monitoring by institutional investors that leads to improved CSR, negative shifts from B to C or stable ratings such as C to C are equally considered no improvement firms. Companies are deleted from the analysis when ratings for the three- (five-) year sample period or institutional ownership data are unavailable.

[Insert Table 1 about here]

Table 2 reports summary statistics for *environment* ratings of sample firms obtained from the Toyo Keizai CSR database. Of the 471 sample firms in the three-year period from 2007 to 2010, 108 firms (23%) improved *environment* ratings, and 363 firms (77%) did not improve *environment* ratings. Of the 443 sample firms over the five-year period from 2007 to 2012, 107 firms (24%) improved *environment* ratings and 336 firms (76%) did not improve. The other CSR categories show similar proportions of improvement and no improvement firms, with around 20 percent of sample companies improving ratings in each of the CSR attributes. The five-year sample similarly shows a higher frequency of rating improvements, of around 25% of sample companies, in all attributes.

[Insert Table 2 about here]

Logit regressions using *D_IMPROVE* are used to test Hypothesis 1, that there is a positive relation between institutional ownership and improved CSR *environment* ratings. The key independent variable is the percentage ownership by institutional investors (INST) in year 2007. Data for INST is available in the Nikkei NEEDS Cges database and defined as ownership held by corporations, foreign investors (excluding foreign corporations), trust accounts, and special accounts of domestic insurance companies. INST does not include ownership by domestic banks and self-accounts of domestic trust banks and insurance companies that historically were the main holders of cross-shareholdings and the source of entrenchment problems (Shinozaki et al., 2015).

We create three additional variables using data from institutional ownership. DINSTOWN specifies the percentage of ownership held exclusively by domestic institutional investors, and DINSTOWN2 further specifies the percentage of ownership held by the largest domestic institutional investors. The variable PRI_SIGN identifies domestic institutional investors who signed up for the PRI between 2006 and 2012. In mid-2006, four large domestic institutional investors became the first Japanese signatories to the PRI: Sumitomo Trust & Banking Co., Mitsubishi UFJ Trust & Banking, Daiwa Asset Management, and Sompo Japan. By using the Nikkei NEEDS Large Shareholder Database, we compute the percentage ownership held by the founding and succeeding PRI signatories as well as the affected subsidiaries for each of the sample companies. Using information available on the PRI website and company websites, we designate the year that each investor signed up to the initiative and determine ownership starting from that year.

Table 3 reports results of the univariate analysis of ownership variables for improvement and no improvement companies. In general, we find that improvement firms have significantly higher values for all ownership variables in both the three- and five-year sample periods. The summary statistics can be interpreted as firms with high institutional ownership being more likely to make a general effort to improve CSR than those with low institutional ownership after the implementation of the PRI and the Ministry of Environment Roundtables. The possibility that firm characteristics such as size, the degree of social scrutiny, and corporate culture affect both institutional ownership and CSR ratings cannot be ruled out.

[Insert Table 3 about here]

The logit regression used in our analysis includes several control variables for observable firm characteristics. To control for the size effect, that larger firms tend to have better CSP (Ioannou and Serafeim, 2012; Barnea and Rubin, 2010), firm size is measured by the natural logarithm of total assets. To account for the possibility that entrenched (incentivized) managers spend more (less) on CSR activities, we control for ownership by cross-shareholding investors (directors) (Aggarwal et al., 2011; Morck and Nakamura, 1999; Cespa and Cestone, 2007). We also control for the influence of outside directors on a board of directors to encourage (discourage) CSR activities (Barnea and Rubin, 2010; Erhemjamts et al., 2012; Murphy and Schlegelmilch, 2013, Dhaliwal et al., 2011).

Table 4 presents descriptive statistics for the control variables used in the regression analysis. For comparison, Table 4 includes statistics for *social engagement*, *corporate governance*, and *employee relations* ratings to demonstrate the similarity in distribution across all four categories.

[Insert Table 4 about here]

In order to contribute to the prevailing discussion in CSR literature regarding CSP and CFP, this study uses the CAPM, Fama-French 3-factor model, and the Fama-French-Carhart 4-factor model (Fama and French, 1992; Carhart, 1997; Bauer et al., 2005), to test the effects of improved CSP on stock price performance. We implement calendar-time portfolio regressions for monthly stock returns of sample companies in the period from April 2007 to March 2010 (March 2011) to compare excess return (alpha) between improvement and no improvement groups. We acquired stock return data from the Nikkei NEEDS Portfolio Master database, and Fama and French Factor data from Kenneth R. French's online data library.¹⁰

5. Empirical results

5.1 Institutional ownership and improved CSR ratings

We adopt $D_IMPROVE$ as the dependent variable in the logit regression analysis to examine whether or not institutional ownership is associated with positive shifts in CSR ratings after controlling for various factors. Specifically, the following model is estimated:

$$\Pr(D_IMPROVE = 1) = g_0 + g_1(INST \text{ or } DINSTOWN \text{ or } DINSTOWN2)_{i,2007} + \sum_k g_k Control_{k,2007} + e_i$$

The coefficient of INST (DINSTOWN or DINSTOWN2) can be interpreted as the effect of a high percentage of institutional ownership on the probability of a positive shift in CSR ratings. Table 5 reports logit regression results for changes in the *environment* rating. Consistent with Hypothesis 1, that the PRI and the report by the Japanese Ministry of Environment led institutional investors to push for improved CSR, the results indicate a positive and significant coefficient of INST, DINSTOWN and DINSTOWN2 suggesting that firms with higher institutional ownership in 2007 are more likely to improve *environment* ratings in the three- and five-year sample periods starting in 2007.

We find that INST, DINSTOWN, and DINSTOWN2 are positive and significant for both the three- and five-year sample. These results indicate that higher percentages of domestic institutional investors lead to the incorporation of national governmental measures in investee companies' CSR policies, and subsequently leads to a rise in *environment* ratings in both periods. Hypothesis 1 predicts that the positive relation between ratings changes and institutional ownership is evident specifically for the *environment* rating. Consistent with this hypothesis, regressions for other CSR categories (unreported) show insignificant coefficients of ownership variables. Also, FRGN is significant for the three-year sample period which may be interpreted as foreign investors supporting the PRI and pushing company policy to improve environmental protection measures in the short-run.

[Insert Table 5 about here]

As a robustness check of the positive relation found between INST, DINSTOWN, and DINSTOWN2 and *environment* ratings, we eliminate companies with the highest rating of AAA in *environment* in 2007. Table 6 provides regression results for the sample, eliminating companies with ratings of AAA in 2007 in this category. The relation between INST, DINSTOWN, DINSTOWN2 and improvements in *environment* ratings remain significant and positive in the three-year sample period and marginally significant in the five-year period. The weakened relation between the ownership variables and the probability of an improved rating may be attributable to the disproportionate elimination of firms from the no improvement group. Since the only movement that firms with AAA ratings in 2007 may experience is a decline, these firms were eliminated from the no improvement group.

[Insert Table 6 about here]

The results of our analysis indicate a significant relation between institutional ownership and changes in *environment* ratings. A potential criticism of our finding is that firms with specific (unobserved) characteristics generally follow social norms (improve CSR ratings), and these firms also had high institutional ownership during the period under investigation. Indeed, the variable SIZE, which may proxy for the degree of social scrutiny, consistently has a positive and significant coefficient. We stress that insignificant coefficients of ownership variables for other CSR categories rule out the endogeneity concern. The collective results suggest that soft law initiated by international organizations (the PRI) fosters good business practices and that national government initiatives play a significant role in disseminating soft law.

10. The file was created using the Nov. 2015 Bloomberg database.

To mitigate reverse causality concerns, we conduct further univariate analysis on the change in the ownership variables over the three- and five-year sample periods. The results are reported in Table 7. We find that the ownership variables are higher for improvement firms than no improvement firms. Differences in means and medians of DINSTOWN and FOREOWN are not significant for either the three- or five-year sample periods indicating no possibility that an increase in percentage ownership by domestic institutional investors or the top foreign investors simply coincided with *environment* rating improvements. INST, DINSTOWN2, and FRGN are not significant in the three-year sample period but show positive and significant differences in means and medians over the five-year sample period. We do not expect that this correlation significantly affects the results of our analysis.

[Insert Table 7 about here]

5.2 CSR improvement and stock price performance

The second objective of this study is to determine if improved CSP, derived from the PRI and Japanese Ministry of Environment, destroys shareholder wealth (Hypothesis 2). The results of the logit regressions in the former section suggest that firms with high INST, DINSTOWN, and DINSTOWN2 in 2007 are likely to improve CSR *environment* ratings over the three- (five-) year period from 2007. This section investigates the effects of movements in *environment* ratings on shareholder wealth. Although numerous studies examine the relation between CSP and CFP, it is extremely difficult to avoid reverse causality and endogeneity problems (Waddock and Graves, 1997). Given that improved CSR ratings originate from an exogenous shock, this study effectively avoids endogeneity problems that may be inherent in CSR research (Dhaliwal et al., 2011; Erhemjamts et al., 2012; Becchetti et al., 2012; Waddock and Graves, 1997).

Our analysis investigates stock returns of the improvement firm portfolio and the no improvement firm portfolio for *environment* ratings. In order to test Hypothesis 2, that improved CSR *environment* ratings lead to negative excess returns, we estimate the Fama and French 3-factor and Fama-French-Carhart 4-Factor models with monthly stock returns for the three- (five-) year sample period starting in April 2008.¹¹ This analysis controls for characteristics specific to ethical companies, such as firm size, that may affect stock returns (Galema, 2008). We employ equally-weighted portfolios to compute portfolio returns.

The estimation results for *environment* ratings are presented in Table 8. The fact that there are no significant coefficients of alpha for improvement portfolios suggests that improved *environment* ratings following the PRI and Japanese Ministry of Environment Roundtables do not adversely affect firm value. In conjunction with the former results, this finding indicates that the PRI and Japanese Ministry of Environment improved CSP without destroying shareholder wealth. We stress that this research contributes to the literature by discussing the CSP-CFP link in a research setting that substantially mitigates endogeneity problems.

[Insert Table 8 about here]

Table 8 indicates that the improvement portfolio for *environment* has a significantly larger coefficient of market risk premium ($R_M - R_f$) than the no improvement portfolio. These results may signify that representative companies, that are strongly correlated to market returns, are likely to improve *environment* ratings. The coefficients of HML derived from the estimation are smaller for the improvement portfolio than for the no improvement portfolio indicating that firms with low book-to-market ratios are likely to enhance CSR activities during the period under analysis.

As an additional robustness check, this study further investigates the change in operating performance, using industry-adjusted ROA (operating income over assets) as a proxy for the three (five) year sample period starting in 2007. No significant difference in the change of industry-adjusted ROA between improvement and no improvement firms are found in the unreported results.

11. For most Japanese companies, the accounting year ends in March (accounting year 2007 ends in March 2008). Since we found changes in *environment* ratings from year 2007 to 2010 (2012), we analyze stock returns in the corresponding period.

6. Conclusion

Increasing public awareness of environmental and social issues has created the need for investigation into the effectiveness of soft law on investor behavior. We therefore investigate the effects of the PRI, that urges institutional investors to introduce ESG issues into ownership policy and decision-making, and the ultimate effects on CSP. We focus our study on Japanese companies and ratings related to environmental protection in order to examine the effectiveness of the Japanese Government's Ministry of Environment in disseminating the PRI through domestic institutional investors. This research setting enables us to examine the role of national government support in promoting social business practice and implementing soft law initiated by international organizations.

We find that institutional ownership and ownership by PRI signatories are positively related to the probability of improved *environment* ratings in both the three- and five-year sample periods starting in 2007. However, we find no significant relation between the ownership variables and the probability of improved ratings in other CSR attributes (*social engagement, corporate governance and employee relations*). These results suggest that soft law geared toward investor behavior can improve business practice, at least to a certain degree, through shareholder preference. This further suggests that national government initiatives play an important role in fostering the dissemination of soft law launched by international organizations. Finally, we find no evidence of negative effects on shareholder wealth due to improved *environment* ratings stemming from the PRI.

In addition to providing policy implications for the effectiveness of soft law on investors, we make several important contributions to the existing CSR literature. Previous studies show significant correlations between institutional ownership and CSR (Coffey and Fryxell, 1991; Graves and Waddock, 1994; Cox et al., 2004) but it is extremely difficult to effectively address endogeneity issues. By taking advantage of an exogenous event for institutional investors and investee firms, we provide evidence of the significant influence that institutional shareholders have on CSR, and substantially mitigate endogeneity problems. The results also suggest that shareholder preference is an important determinant of CSP. Although the long-standing debate on the CSP-CFP relationship remains inconclusive (Pava and Krausz, 1996; Ruf et al., 2001; Al-Tuwaijri et al., 2004; Renneboog, et al., 2008; Fisher-Vanden and Thorburn, 2011), our findings indicate that CSP does not affect CFP in a research setting less subject to endogeneity and reverse causality concerns.

7. References

- Aggarwal, R., I. Erel, M. Ferreira, and P. Matos (2011). "Does governance travel around the world? Evidence from institutional investors." *Journal of Financial Economics* 100, 154-81.
- Al-Tuwaijri, S.A., T.E. Christensen, and K.E. Hughes (2004), "The Relations Among Environmental Disclosure, Environmental Performance, and Economic Performance: A Simultaneous Equations Approach," *Accounting, Organizations and Society* 29 (5-6), 447-472.
- Aust, D.N. (2013), "Enhancing Shareholder Value by Improving Sustainability Performance." *Corporate Finance Review* 17 (6), 11-15.
- Barnea, A. and A. Rubin (2010), "Corporate Social Responsibility as a Conflict between Shareholders." *Journal of Business Ethics* 97, 71-86.
- Bauer, R., K. Koedijik, R. Otten (2005), "International Evidence on Ethical Mutual Fund Performance and Investment Style." *Journal of Banking and Finance* 29, 1751-67.
- Becchetti, L., R. Ciciretti, I. Hasan and N. Kobeissi (2012), "Corporate Social Responsibility and Shareholder's Value." *Journal of Business Research* 65, 1628-1635.
- Black, B. and W. Kim (2012), "The Effect of Board Structure on Firm Value: A Multiple Identification Strategies Approach Using Korean Data." *Journal of Financial Economics* 104, 203-26.
- Carhart, M. (1997), "On Persistence of Mutual Fund Performance." *Journal of Finance* 52, 57-82.
- Cespa, G., and G. Cestone (2007), "Corporate Social Responsibility and Managerial Entrenchment." *ECGI Working Paper Series in Finance*.
- Cheng, B., I. Ioannu, and G. Serafim (2014), "Corporate Social Responsibility and Access to Finance." *Strategic Management Journal* 35, 1-23.
- Chhaochharia, V. and Y. Grinstein (2007), "Corporate Governance and Firm Value: The Impact of the 2002 Governance Rules." *Journal of Finance* 62, 1789-1825.
- Clarkson, M.B.E. (1995), "A Stakeholder Framework for Analyzing and Evaluating Corporate Social Performance." *Academy of Management Review* 20, 92-117.
- Coffey, B.S. and G.E. Fryxell (1991), "Institutional Ownership of Stock and Dimensions of Corporate Social Performance: An Empirical Examination." *Journal of Business Ethics* 10, 437-44.
- Cox, P., S. Brammer, and A. Millington (2004), "An Empirical Examination of Institutional Investor Preferences for Corporate Social Performance." *Journal of Business Ethics* 52, 27-43.
- Dahya, J. and J. J. McConnell (2007), "Board Composition, Corporate Performance, and the Cadbury Committee Recommendation." *Journal of Financial and Quantitative Analysis* 42, 535-64.
- Demiralp, I., D. Ranjan, F. P. Schlingemann, and V. Subramaniam (2011), "Are there monitoring benefits to institutional ownership? Evidence from seasoned equity offerings." *Journal of Corporate Finance* 17, 1340-59.
- Dhaliwal, D.S., O.Z. Li, A. Tsang, and Y.G. Yang (2011), "Voluntary Nonfinancial Disclosure and the Cost of Equity Capital: The Initiation of Corporate Social Responsibility Reporting." *The Accounting Review* 86 (1) 59-100.
- Dhaliwal, D.S., O.Z. Li, A. Tsang, and Y.G. Yang (2014), "Corporate Social Responsibility Disclosure and the Cost of Equity Capital: The Roles of Stakeholder Orientation and Financial Transparency." *Journal of Accounting and Public Policy* 33, 328-55.

El Ghouli, S., O. Guedhami, C.C.Y. Kwok, and D.R. Mishra (2011), "Does Corporate Social Responsibility Affect the Cost of Capital?" *Journal of Banking & Finance* 35, 2388-406.

Erhemjamts, O., Q. Li, and A. Venkateswaran (2012), "Corporate Social Responsibility and Its Impact on Firms' Investment Policy, Organizational Structure, and Performance." *Journal of Business Ethics* 118, 395-412.

Fama, E.F. and K.R. French (1992), "The Cross-Section of Expected Stock Returns." *The Journal of Finance* 47, 427-65.

Fisher-Vanden, K., and K.S. Thorburn (2011), "Voluntary Corporate Environmental Initiatives and Shareholder Wealth." *Journal of Environmental Economics and Management* 62, 430-45.

Freeman, R.E. (1984), *Strategic Management: A Stakeholder Perspective*. Pitman: Boston, MA.

Friedman, M. (1962), *Capitalism and Freedom*. The University of Chicago Press: Chicago, IL.

Guenster, N., R. Bauer, J. Derwall, K. Koedijk (2011), "The Economic Value of Corporate Eco-Efficiency." *European Financial Management* 17, 679-704.

Galema, R., A. Plantinga, and B. Scholtens (2008), "The Stocks at Stake: Return and Risk in Socially Responsible Investment." *Journal of Banking & Finance* 32, 2646-54.

Graves, S.B., Waddock, S.A. (1994), "Institutional Owners and Corporate Social Performance." *Academy of Management Journal* 37 (4), 1034-46.

Hartzell, J.C. and L.T. Starks (2003), "Institutional Investors and Executive Compensation." *Journal of Finance* 58 (6), 2351-74.

Helwege, J., V. J. Intintoli, and A. Zhang (2012), "Voting with their feet or activism? Institutional investors' impacts on CEO turnover." *Journal of Corporate Finance* 18, 22-37.

Hillman, A.J. and G.D. Kleim (2001), "Shareholder Value, Stakeholder Management and Social Issues: What's the Bottom Line?" *Strategic Management Journal* 22, 125-39.

Ioannou I., and G. Serafeim (2012), "What Drives Corporate Social Performance? The Role of Nation-Level Institutions." *Journal of International Business Studies* 43 (9), 834-64.

Jensen, M.C. (2001), "Value Maximisation, Stakeholder Theory, and the Corporate Objective Function." *European Financial Management* 7, 297-317.

Jensen, M.C. and W.H. Meckling (1978), "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure." *Journal of Financial Economics* 3, 305-60.

Lin-Hi, N. and K. Müller (2013), "The CSR Bottom Line: Preventing Corporate Social Irresponsibility." *Journal of Business Research* 66, 1928-36.

McWilliams, A. and D. Siegel (2001), "Corporate Social Responsibility: A Theory of the Firm Perspective." *The Academy of Management Review* 26 (1), 117-27.

Mitchell, R.K., B.R. Agle, and D.J. Wood (1997), "Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What Really Counts." *Academy of Management Review* 22 (4), 853-86.

Morck, R. and M. Nakamura (1999), "Banks and Corporate Control in Japan." *The Journal of Finance* 74 (1), 319-39.

Murphy, P.E. and B.B. Schlegelmilch (2013), "Corporate Social Responsibility and Corporate Social Irresponsibility: Introduction to a Special Topic Section." *Journal of Business Research* 66, 1807-13.

Orlitzky, M. and J.D. Benjamin (2001), "Corporate Social Performance and Firm Risk: A Meta-Analytic Review." *Business and Society* 40, 369-92.

Pava, M.L. and J. Krausz (1996), "The Association Between Corporate Social Responsibility and Financial Performance: The Paradox of Social Cost." *Journal of Business Ethics* 15 (3), 321-57.

Renneboog, L., J.T. Horst, and C. Zhang (2008), "Socially Responsible Investments: Institutional Aspects, Performance and Investor Behavior." *Journal of Banking & Finance* 32, 1723-42.

Ruf et al. (2001), "An Empirical Investigation of the Relationship Between Change in Corporate Social Performance and Financial Performance: A Stakeholder Theory Perspective." *Journal of Business Ethics*, 32 (2), 143-156.

Schaefer, B.P. (2008), "Shareholders and Social Responsibility," *Journal of Business Ethics* 81, 297-312.

Shinozaki, S., H. Moriyasu, and K. Uchida (2015), "Shareholder Composition and Managerial Compensation." *Journal of Financial and Quantitative Analysis*, forthcoming.

Suto, M. and H. Takehara (2013), "The Impact of Corporate Social Performance on Financial Performance: Evidence from Japan." *Working Paper, Waseda University*.

Teraji, S. (2009), "A Model of Corporate Social Performance: Social Satisfaction and Moral Conduct." *Journal of Socio-Economics* 38, 926-34.

Van der Laan, G., H. Van Ees, and A. Van Witteloostuijn (2008), "Corporate Social and Financial Performance: An Extended Stakeholder Theory, and Empirical Test with Accounting Measures." *Journal of Business Ethics* 79, 299-310.

Uchida, K. (2011), "Does Corporate Board Downsizing Increase Shareholder value? Evidence from Japan." *International Review of Economics and Finance* 20, 562-73.

Waddock, S. A. and S.B. Graves (1997), "The Corporate Social Performance–Financial Performance Link." *Strategic Management Journal* 18 (4), 303-19.

Table 1 - Definition of variables

<i>D_IMPROVE</i>	Dummy variable that takes on a value of 1 if the sample firm improved CSR ratings over the sample period (improvement firm), or a value of 0 if the firm did not improve CSR ratings over the sample period (no improvement firm)
<i>INST</i>	Institutional investors, percentage of institutional ownership held by foreign investors (excluding foreign corporate investors), trust accounts, and special accounts of domestic trust banks and insurance companies
<i>DINSTOWN1</i>	Domestic institutional investors, percentage of domestic institutional ownership held by trust accounts and special accounts of trust banks and insurance companies, eliminates ownership by foreign investors listed in the Nikkei NEEDS database
<i>DINSTOWN2</i>	Largest domestic institutional investors, percentage of the domestic institutional ownership held by the largest investors, eliminates foreign investors
<i>PRI_SIGN</i>	Percentage ownership held by Japanese institutional investors who signed up for the PRI between 2006 and 2012
<i>FRGN</i>	Foreign investors, comprehensive percentage of foreign ownership
<i>FOREOWN</i>	Foreign institutional investors, percentage of ownership limited to the top 30 foreign investors listed in the Nikkei NEEDS database
<i>SIZE</i>	Natural log of total assets
<i>TOBINQ</i>	Tobin's Q, market value of equity and book value of liabilities divided by book value of assets
<i>ROA</i>	Return on assets, ratio of operating income less financial revenue over total assets
<i>DIR</i>	Outside directors, proportion of outside directors over total board members
<i>CROSS</i>	Cross-shareholding investors, percentage ownership of domestic corporate shareholders with cross-shareholdings
<i>ANTEI</i>	Domestic holding companies: 1. cross-shareholding investors, 2. Banks, credit unions (eliminating special allowances, and trust allowances) 3. Public companies and financial institutions, 4. Public relations companies (parent companies) corresponding to stock investment percentage, 5. Percentage of special employee stocks, 6. Special company special stock percentage, 7. Self-held shares, 8. Corporate held stocks (above 3%, including foreign companies, trusts and banks) Stable shareholders, percentage of ownership by stable shareholders
<i>RTO_TPBK</i>	Percentage of stocks held by main banks. Main banks are the principle bank dealing (survey base) Main bank ownership, ratio of ownership by main banks
<i>LEV</i>	Debt-asset ratio

Table 2 - Sample statistics: *environment* ratings

This table shows the number and percentage of sample firms that improved (did not improve) CSR *environment* ratings over the three- and five-year sample periods.

	Improvement	No improvement	Total
3-year sample	108 (23%)	363 (77%)	471
5-year sample	107 (24%)	336 (76%)	443

Table 3 - Univariate analysis: ownership variables and *environment* ratings change

This table reports statistics of ownership variables in 2007 for the sample of Japanese firms over the three- (five-) year sample periods. The columns on the far right side indicate t-statistics (z-statistics) for the null hypothesis that mean (median) of the ownership variable for improvement portfolios are identical to no improvement portfolios.

*, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively

	Improvement				No improvement				Difference	
	Mean	Median	St.Dev	N	Mean	Median	St.Dev	N	Mean (t-statistics)	Median (z-statistics)
3-year sample										
INST	33.11	33.31	14.99	108	23.90	21.87	17.52	363	-4.96***	-5.13***
DINSTOWN	18.95	17.59	11.06	108	14.55	13.27	9.56	363	-4.05***	-3.93***
DINSTOWN2	12.50	12.64	6.95	108	9.43	8.10	7.86	363	-3.65***	-4.34***
FRGN	20.89	21.18	11.39	108	14.94	11.66	13.47	363	-4.17***	-5.08***
FOREOWN	5.12	4.25	4.49	108	4.33	3.04	5.91	363	-1.29	-2.88***
5-year sample										
INST	32.72	32.20	16.51	107	25.07	23.84	17.11	336	-4.06***	-4.10***
DINSTOWN	18.40	18.03	9.81	107	15.10	14.31	9.19	336	-3.19***	-3.12***
DINSTOWN2	12.56	17.24	7.99	107	9.85	8.65	7.60	336	-3.17***	-3.27***
FRGN	20.93	20.03	12.33	107	15.57	12.52	13.29	336	-3.69***	-4.24***
FOREOWN	5.50	6.41	4.23	107	4.28	3.09	5.36	336	-1.94	-2.61***

Table 4 - Descriptive statistics: CSR rating categories and control variables

This table reports descriptive statistics for all CSR rating categories and control variables used in the regression analysis.

	Mean	St. Dev.	Min	Median	Max	N
Environment	3.56	0.91	1	3	5	473
Social engagement	3.57	0.90	1	3	5	463
Corporate governance	3.50	0.93	1	3	5	459
Employee relations	3.49	0.86	1	3	5	455
SIZE	12.11	1.83	7.78	11.95	17.29	473
LEV	50.85	19.05	8.41	52.84	93.61	473
ROA	6.37	4.71	-2.98	5.25	21.81	473
TOBINQ	1.08	0.32	0.52	1.01	2.26	473

Table 5 - Logit regression results: *environment* ratings

This table reports the results of logit regressions conducted for the *environment* category of CSR ratings in the Toyo Keizai CSR database. All independent variables are from 2007. An industry dummy variable (TCLS) for four groups is included in the regression analysis. Figures in parentheses are z-statistics computed by heteroskedasticity-robust standard errors.

*, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively

	3-year sample						5-year sample					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
ENVRAT	-1.95*** (-6.94)	-1.94*** (-6.88)	-1.94*** (-6.92)	-1.94*** (-6.88)	-1.92*** (-6.80)	-1.91*** (6.79)	-2.09*** (-7.23)	-2.10*** (-7.36)	-2.09*** (-7.32)	-2.10*** (-7.28)	-2.08*** (-7.25)	-2.06*** (-7.20)
INST	0.03*** (3.10)						0.02*** (2.12)					
DINSTOWN		0.038*** (2.48)						0.04*** (2.13)				
DINSTOWN2			0.05*** (2.51)						0.04*** (2.03)			
FRGN				0.02** (1.85)						0.03 (1.56)		
FOREOWN					-0.01 (-0.48)						0.03 (0.78)	
PRI_SIGN						0.04 (1.00)						0.03 (0.67)
SIZE	0.72*** (4.95)	0.83*** (6.31)	0.86*** (6.53)	0.78*** (5.39)	0.91*** (6.85)	0.87*** (6.59)	0.72*** (4.90)	0.80*** (6.03)	0.82*** (6.17)	0.73*** (4.60)	0.84*** (6.13)	0.84*** (6.24)
LEV	-0.00 (-0.34)	-0.01 (-0.96)	-0.01 (-0.91)	-0.00 (-0.38)	-0.01 (-0.82)	-0.01 (-0.80)	-0.00 (-0.13)	-0.01 (-0.66)	-0.00 (-0.57)	-0.00 (-0.01)	-0.00 (-0.34)	-0.00 (-0.47)
ROA	0.02 (0.04)	0.03 (0.78)	0.02 (0.58)	0.03 (0.88)	0.04 (1.06)	0.04 (0.95)	0.02 (0.41)	0.02 (0.57)	0.02 (0.44)	0.03 (0.66)	0.03 (0.81)	0.03 (0.75)
TOBINQ	-0.02 (-0.04)	0.10 (0.19)	0.12 (0.22)	0.02 (0.03)	0.12 (0.24)	0.11 (0.22)	0.45 (0.84)	0.56 (1.06)	0.57 (1.06)	0.41 (0.82)	0.57 (1.09)	0.54 (1.03)
Constant	-4.88*** (-4.10)	-5.99*** (-5.55)	-6.15*** (-5.71)	-5.39*** (-4.55)	-6.55*** (-6.22)	-6.28*** (-5.94)	-4.54*** (-3.34)	-5.36*** (-4.38)	-5.52*** (-4.50)	-4.58*** (-3.00)	-5.66*** (-4.67)	-5.64*** (-4.66)
Pseudo-R ²	0.25	0.25	0.25	0.24	0.24	0.24	0.25	0.26	0.25	0.25	0.25	0.25
N	471	471	471	471	471	471	443	443	443	443	443	443

Table 6 - Logit regression results: *environment* ratings eliminating highest rated firms

This table reports the results of logit regressions conducted for the *environment* category of CSR ratings in the Toyo Keizai CSR database, eliminating the highest rated (AAA) firms in 2007. All independent variables are from 2007. An industry dummy variable (TCLS) for four groups is included in the regression analysis. Figures in parentheses are z-statistics computed by heteroskedasticity-robust standard errors.

*, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively

	3-year sample						5-year sample					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
ENVRAT	-1.40*** (-4.64)	-1.38*** (-4.51)	-1.40*** (-4.59)	-1.38*** (-4.54)	-1.36*** (-4.41)	-1.36*** (-4.43)	-1.55*** (-4.95)	-1.56*** (-5.03)	-1.55*** (-4.99)	1.56*** (-4.94)	1.55*** (-4.89)	-1.53*** (-4.85)
INST	0.03*** (2.58)						0.02* (1.69)					
DINSTOWN		0.03*** (2.00)						0.03* (1.71)				
DINSTOWN2			0.03** (1.81)						0.03 (1.52)			
FRGN				0.03*** (2.17)						0.03* (1.66)		
FOREOWN					0.01 (0.43)						0.05 (1.57)	
PRI_SIGN						0.02 (0.58)						0.01 (0.32)
SIZE	0.79*** (5.43)	0.89*** (6.79)	0.91*** (6.95)	0.80*** (5.53)	0.94*** (7.32)	0.93*** (6.99)	0.76*** (4.93)	0.82*** (5.98)	0.84*** (6.12)	0.73*** (4.30)	0.86*** (6.52)	0.87*** (6.16)
LEV	-0.00 (-0.39)	-0.01 (-0.84)	-0.01 (-0.86)	-0.00 (-0.23)	-0.01 (-0.68)	-0.01 (-0.76)	-0.00 (-0.23)	-0.01 (-0.63)	-0.01 (-0.57)	0.00 0.04	-0.00 (-0.20)	-0.00 (-0.48)
ROA	0.01 (0.35)	0.03 (0.71)	0.02 (0.49)	0.02 (0.61)	0.03 (0.86)	0.03 (0.81)	0.01 (0.29)	0.02 (0.43)	0.01 (0.33)	0.02 (0.42)	0.03 (0.76)	0.03 (0.61)
TOBINQ	-0.00 (-0.01)	0.10 (0.19)	0.12 (0.22)	-0.04 (-0.07)	0.10 (0.20)	0.11 (0.21)	0.49 (0.89)	0.60 (1.08)	0.59 (1.06)	0.41 (0.76)	0.54 (1.03)	0.56 (1.01)
Constant	-7.24*** (-5.15)	-8.29*** (-6.33)	-8.37*** (-6.41)	-7.37*** (-5.39)	-8.76*** (-6.89)	-8.63*** (-6.71)	-6.54*** (-4.15)	-7.20*** (-5.09)	-7.34*** (-5.15)	-6.24*** (-3.61)	-7.73*** (-5.77)	-7.59*** (-5.34)
Pseudo-R ²	0.24	0.24	0.24	0.24	0.23	0.23	0.22	0.22	0.22	0.22	0.22	0.22
N	388	388	388	388	388	388	361	361	361	361	361	361

Table 7 - Univariate analysis: reverse causality concerns

This table reports statistics of the change in ownership variables over the three- (five-) year sample periods. The columns on the far right side indicate t-statistics (z-statistics) for the null hypothesis that mean (median) of the ownership variable for improvement portfolios are identical to no improvement portfolios. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively

	Improvement				No improvement				Difference	
	Mean	Median	St.Dev	N	Mean	Median	St.Dev	N	Mean (t-statistics)	Median (z-statistics)
3-year sample										
INST	-1.66	-0.83	5.62	108	-2.06	-1.34	6.04	363	-0.61	-0.97
DINSTOWN	-0.63	-0.01	4.67	108	-1.13	-0.86	4.81	363	-0.95	-1.57
DINSTOWN2	-0.06	0.22	4.50	108	-0.59	-0.31	4.66	363	-1.05	1.94**
FRGN	-1.62	-0.64	4.54	108	-1.45	-0.72	4.92	363	0.32	-0.02
FOREOWN	-1.10	-0.79	4.46	108	-0.75	-0.31	5.45	464	0.61	0.88
PRI_SIGN	0.87	0.06	4.04	108	-0.05	-0.04	2.89	363	-2.65***	-2.22***
5-year sample										
INST	-27.42	-28.30	15.76	107	-21.74	-19.98	15.92	336	3.22***	3.39***
DINSTOWN	-1.61	1.53	4.72	107	-2.07	-1.56	5.58	336	-0.77	-1.08
DINSTOWN2	-11.75	-11.77	8.53	107	-9.63	-8.49	7.56	336	2.45***	2.63***
FRGN	-16.30	-15.68	10.86	107	-12.29	-9.11	12.15	336	3.04***	3.81***
FOREOWN	-0.72	-0.32	4.33	107	-1.07	-0.15	5.18	336	-0.64	0.14
PRI_SIGN	-0.18	0	2.41	107	-0.08	-0.14	3.07	336	0.32	-0.86

Table 8 - Calendar-time portfolio regression for environment ratings

This table reports calendar-time portfolio regression results using the Fama-French-Carhart 4-factor model: April 2008 to March 2011 for the three-year sample and April 2008 to March 2013 for the five-year sample. Improvement portfolios consist of firms that improve environment ratings over the three- (five-) year period from 2007 and no improvement portfolios consist of firms that have stable or declining ratings over the three- (five-) year sample period. Value-weighted returns are used for portfolio return. The figures in parentheses are t-statistics.

*, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

4-factor model							
3-year sample, Apr. 2008 – Mar. 2011							
	Alpha	$R_M - R_f$	SMB	HML	WML	R-squared	
Improvement	-0.00 (-0.58)	0.95*** (8.49)	-0.41 (-1.69)	0.44 (1.68)	-0.06 (-0.41)	0.75	36
No Improvement	-0.00 (-0.70)	0.84*** (7.79)	-0.57** (-2.50)	0.59** (2.37)	-0.11 (-0.77)	0.74	36
Difference	0.00 (0.19)	0.12** (2.20)	0.17 (1.46)	-0.15 (-1.22)	0.05 (0.51)	0.11	36
5-year sample, Apr. 2008 – Mar. 2013							
Improvement	-0.00 (-0.42)	1.05*** (10.12)	-0.47*** (-2.42)	0.19 (0.86)	0.00 (0.01)	0.70	60
No Improvement	-0.00 (-1.23)	0.87*** (9.96)	-0.50*** (-3.08)	0.33* (1.80)	-0.07 (-0.63)	0.71	60
Difference	0.00 (1.25)	0.18*** (3.55)	0.03 (0.35)	-0.14 (-1.32)	0.07 (1.09)	0.17	60

APPENDIX

United Nations Global Compact Principles for Responsible Investing	
Human Rights	
Principle 1	Businesses should support and respect the protection of internationally proclaimed human rights.
Principle 2	Businesses should make sure they are not complicit in human rights abuses.
Labour	
Principle 3	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.
Principle 4	Businesses should uphold the elimination of all forms of forced and compulsory labour.
Principle 5	Businesses should uphold the effective abolition of child labour.
Principle 6	Businesses should uphold the elimination of discrimination in respect of employment and occupation.
Environment	
Principle 7	Businesses should support a precautionary approach to environmental challenges.
Principle 8	Businesses should undertake initiatives to promote greater environmental responsibility.
Principle 9	Businesses should encourage the development and diffusion of environmentally friendly technologies.
Anti-Corruption	
Principle 10	Businesses should work against corruption in all its forms, including extortion and bribery.