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Long-term Financial Performance of Corporate Social Responsibility, External Governance from Foreign Stockholders,and Regional Stakeholders

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Abstract

We conduct an empirical investigation of the relationship between corporate social responsibility (CSR) and long-term stock performance in Japan. We find that: (1) CSR activities related to labor relations, community relations, and the environment are positively related to long-term stock returns; (2) firms with strong external corporate governance, higher foreign investor ownership, exhibit superior stock performance; (3) socially responsible regional customers play an essential role in determining which CSR activities effectively enhance long-term stock returns, whereby Europeans favor CSR measures related to the environment, and in developing countries, CSR measures related to the community exhibit a significant, positive effect. All over regions,

the employee is interest. By applying a robust methodology to over 10 years of data, our study supports the notion that investors in the Japanese market are significantly concerned about the ethical policies of firms and these concerns are reflected in the markets. This study provides quantitative evidence of the positive effect that CSR has on long-term stock investments in the Japanese market. It also provides evidence that higher foreign investor ownership and responsible regional customers play a critical role in improving CSR activities. Based on the results, we propose important ways for managers to enhance shareholder value and for policymakers to identify additional measures that promote welfare.

Keywords: corporate social responsibility, long-term stock performance, regional consumers, foreign investors, corporate governance

JEL Classifications: G11; G32; G39

1. Introduction

Corporate social responsibility (CSR) has become a subject of growing interest for firms, regulators, investors, and stakeholders. Based on various responsibility criteria, a increasing number of institutes, investment funds, and publications are calling on firms to alter their business practices. In response to the increased attention given to the impact of CSR, a 2017 KPMG survey finds substantial growth in global CSR reporting rates (75% in 2017 compared to 73% in 2015 and 18% in 2002) and in the number of firms that include CSR information in their annual reports (60% in 2017 compared to 56% in 2015). Although Japan lags behind North America and Western Europe, where most CSR reporting takes place, CSR has nevertheless become an increasingly important business practice and academic issue. This growth reflects regulatory changes and new requirements, as well as greater market awareness and pressure from investors and consumers.

For example, the Government Pension Investment Fund (JPIF) in Japan, the country's most significant public pension investment agency, has announced to investors that it will now promote CSR financial activities. In addition, Japanese firms have increased the number of foreign stockholders. Figure 1 depicts the average ratios of foreign investors. These figures are increasing annually, and the ratios of CSR-active firms are higher than those of non-CSR-active firms. CSR has become one of the most important themes in the investment world, not only for Japanese domestic investors but also for global investors. Even in such circumstance of Japanese market, the empirical analyses about CSR activities focusing on long-term investment for Japanese firms are less.

【Insert Figure 1 around here】

On the academic side, Kolk (2016) confirms the importance of CSR issues. This review of the CSR literature over the past 50 years analyzes issues associated with the environment, ethics, poverty, and sustainable development.

Theoretically, CSR is part of contract theory. The contractarian approach defines CSR as a "model of extended corporate governance whereby those who run firms (entrepreneurs, directors, and managers) have responsibilities that range from fulfillment of their fiduciary duties toward the owners to fulfillment of analogous fiduciary duties toward all the firm's stakeholders" (Sacconi, 2006). The origin of this definition is the neo-institutional theory (Grossman & Hart, 1986). Because the responsibilities of managers characterize the relationships between firms and shareholders/stakeholders, a firm can develop a reputation by adopting an explicitly announced CSR standard despite information asymmetries (Antoni & Portale, 2011). Antoni and Portale (2011) indicate that "contractarian CSR practices are considered implemented when stakeholder engagement becomes part of a firm's governance, fiduciary relationships are constituted, and the firm develops a reputation by complying with commitments subscribed in the social contract".

CSR enables companies to acquire the "license to operate" that society implicitly grants to corporations that perform well (Porter and Kramer, 2006). The license to operate can be considered as a screen of a company's legitimacy that may be as important for ongoing operations as financial returns (Campbell, 2007). Recently, one of the most frequently discussed CSR issues is the relationship between CSR performance and stock performance. Namely, the concern is whether CSR creates or destroys value (Margolis, Elfenbein, & Walsh, 2009; Kitzmueller & Shimshack, 2012). CSR can destroy value in the presence of agency problems, which occur if managers pursue CSR projects they prefer, but which do not enhance value

(Cheng, Hong, & Shue, 2013; Krüger, 2015). Brammer, Brooks, and Pavelin (2006) find that composite CSR indicators have a negative influence on stock returns. Created value occurs when CSR is used as a strategic tool to maximize shareholder wealth (Shirasu, 2011; Cheng, Ioannou, & Serafeim, 2014). Margolis et al. (2009) review 106 studies and show that the overall effect of CSR created value is positive, but small, and that recent social and environmental activities produce better financial results. Kim et al. (2012) remark that CSR-active information may replace financial information to a large extent. Benlemlih (2017) finds that highly successful CSR performance reduces information asymmetry. All in all, it can be said that the theoretical issues regarding CSR and performance are relatively clearly defined, but the corresponding empirical outcomes are still ambiguous.

Achieving the goals of CSR generally requires sustained efforts over long periods of time. This includes tasks such as reforming the governance system, the development of positive relationships between employers and employees, and welfare improvements in companies' communities. Therefore, we focus on long-term investment for investigating CSR performance.

This paper investigates the following three issues. First, we contribute to the literature on the link between CSR and stock returns in the Japanese market. We employ the simplest firm value measure; stock returns. We confirm whether the CSR activities increase the stock performance in each CSR category. For example, employee satisfaction has a certain value, but not immediately (Edmans, Li, & Zhang, 2018). As a result, we need to focus on the long-term effects of CSR activities.

Second, we consider the role of overseas sale regions and the power of regional consumers as stakeholders. Recently, Japanese firms have expanded into overseas markets to increase sales. When Japanese firms operate their businesses in foreign countries, they must

enhance their reputation and establish trust with foreign consumers, employees, investors, and the society at large. It has been found that consumer firm assessment, product evaluation, final consumption decision, and willingness to pay also depend on the firm's CSR track record. Empirical evidence of the positive impact of this type of trust on stock performance has been found to be strong for a number of emerging markets and Europe, but weak in the U.S. (Giese, Lee, Melas, Nagy, & Nishikawa, 2019). Hence, we investigate CSR's stock returns related to CSR activities by sales regions over the long- term.

Third, we study the external power of foreign stockholders. Many foreign investors have recently entered the Tokyo stock market as shareholders (see Figure 1) and expect managers to maximize their investment returns. CSR may be seen as a strategic tool to enforce best practices by managers and increase benefits to the firm. Indeed, foreign investors are particularly valuable because they boost the management and market performance of Japanese firms due to the improved corporate governance standards. The link between CSR and corporate governance is explored by Cespa and Cestone (2007). They study whether an efficient manager should use CSR. The investors with strong corporate governance power to firms who provide the incentive of promoting social actives to firms by using the financial-investment tools (Hanazaki, 2014). Thus, foreign investors as external governance to Japanese firms are associated with positive CSR activities. The potential benefits of positive CSR activities suggest that Japanese firms with significant CSR activities and high levels of foreign ownership are more likely to exhibit better financial performance. Also, empirically, Boubakri, El Ghoul, Wang, Guedhami, and Kwok (2016) find the evidence that foreign investors enforce CSR performance. The authors also find that cross-listed firms in the U.S. market have better CSR performance than domestic firms that

are not cross-listed. Moreover, cross-listed firms with better CSR performance exhibit higher valuations.

Our results are as follows. First, we find that CSR activities related to employee, the community, and the environment boost stock performance over the long-term in the Japanese market. Notably, during the 2008 global financial crisis period, the effect of CSR on stock returns is stronger. Our empirical results are robust with respect to firm size and industry. Second, the regions of overseas markets are essential for determining which CSR activities are effective. Environmental measures have been found to be more effective in Europe while community measures are more effective in developing countries. The reginal consumers evaluate the firms value by purchasing products as stakeholders. Finally, firms with strong corporate governance and higher foreign investor ownership display improved stock performance. Along with shareholder power, stakeholder power is also necessary to enhance long-term stock returns through CSR activities.

The remainder of this paper is structured as follows. Section 2 develops our research questions. Section 3 describes our sample and presents our empirical methods. Section 4 discusses the empirical results, while Section 5 provides concluding remarks and directions for further research.

2. Research Hypotheses

CSR is a model of extended corporate governance in which those who run the firm have responsibilities not only towards the firm's shareholders but also towards all the firm's

stakeholders (Sacconi, 2006). Stakeholders not only include the financial claimholders, but also employees, customers, communities, and government officials (Jensen, 2005). For example, Friedman (1970) identified the following stakeholders as being relevant for social responsibility: stockholders, customers, employees, people associated with environmental improvements, and people who fight poverty. Stigler (1962) indicates that CSR has enabled firms to adjust wage labor and non-monetary conditions of employment by targeting lower-quality workers. Bhattacharya and Sen (2003) suggest that social consumer preferences may drive CSR. Moreover, the high demand for social goods empowers the business incentive of managers (Baron, 2008). Therefore, it is essential to study individual CSR activity categories as well as their joint influence.

Since our CSR data are classified into five CSR categories—governance, customer, community, employee, and environmental—CSR activity data by category are readily available. However, by having access only to these five categories, we may necessarily see the whole picture of Japanese CSR activities and may know the full extent of relationships between different CSR categories. For this reason, we now provide an overall picture of the CSR activities of Japanese firms. Thus, we conduct a preliminary investigation of the following question before formulating the hypotheses:

What is the whole picture of CSR activities in Japan?

There are two views about the assessment of CSR value creation. The first addresses the aforementioned issue that CSR may signal the presence of agency problems whereby managers

engage in CSR that benefits themselves at the expense of shareholders (Krueger, 2015) [1]. Furthermore, managers engaged in time-consuming CSR activities may lose their focus on their core managerial responsibilities (Jensen, 2005). Overall, some CSR-active activities can be the result of good governance, which would be consistent with the creation of shareholder value, while others can be driven by agency problems (Ferrell et al. 2016). Empirically, Harjoto and Jo (2011) show that CSR engagements help reduce the "conflict-of-interest between management and non-investing stakeholders".

The second view considers CSR from a strategic perspective, considering it to be a strategic tool that can lead managers to maximize the wealth of all stakeholders, namely, stockholders, employees, consumers/suppliers, and community. CSR can be market driven or "strategic," as argued by McWilliams and Siegel (2001). Some empirical studies find that CSR has a positive effect on firm value. Fatemi et al. (2015) explain that stronger ESG characteristics are linked to better business practices, such as attracting more talented employees, achieving better innovation management, creating long-term business plans, improving incentive plans for management, and providing better customer satisfaction. Jiao (2010) finds positive valuation effects of CSR when firms meet the expectations of their non-shareholders (employees, community, environment, customers, etc.). Shirasu (2011) shows that, in Japan, stocks related to socially responsible investments (SRI) exhibit better performance than non-SRI-related stocks; the SRI score is related positively to stock returns. Dimson, Karakaş, and Li (2015) find that better CSR performance is related to larger abnormal returns. El Ghoul, Guedhami, Kwok, and Mishra (2011) find that CSR results in a lower cost of capital and enhances a firm's valuation.

[1] On the contrary, Brekke et al. (2003) shows that CSR can reduce moral hazard in the context of the labor market as well as reducing agency cost due to the matching agents' and principals' interests.

Following the theoretical setup by Mollet and Ziegler (2014), the relationship between CSR activities and stock performance is ambivalent. The following three views are discussed in the literature (Bauer et al., 2005; Hamilton, Jo, & Statman, 1993). The first view states that if socially responsible investors increase stock prices of firms with high CSR performance, CSR stocks are overpriced and should therefore have lower expected returns. The second view is that the expected returns of SRI stocks are higher if high CSR performance is related to a higher corporate performance, but this has not been acknowledged by investors, implying that CSR stocks are underpriced. Finally, the third view states that SRI stocks are not mispriced since the stock market correctly prices CSR activities. Although the first view is in line with an extension of the capital asset pricing model (CAPM), if the CAPM is extended to reflect asymmetric information, segmented markets are created in which stock prices are affected by the combination of different investor bases and imperfect diversification. In this context, SRI stocks can be overpriced due to a broader investor base. In contrast, in line with the second view, the studies of Eccles, Ioannou, and Serafeim, (2014) and Edmans (2011) report positive abnormal returns for CSR stocks in the US. Eccles et al. (2014) show that these firms follow different practices and have different investor bases and thus, have higher stock performance. Several types of investors plan on holding a stock for a longer term than others to optimize financial performance over a longer period of time. These investors are likely to have different strategies, such as CSR-related strategies, and are less interested in short-term performance fluctuations (Eccles et al. 2014).

There is evidence that some types of intangible assets, which are not directly captured by accounting output, partly determine stock market prices. For example, intangible assets such as firms with superior governance (Giroud & Mueller, 2011), customer satisfaction (Fornell, Mithas,

Morgeson III, & Krishnan, 2006), environmental efficiency (Derwall, Guenster, Bauer, & Koedijk, 2005), and employee satisfaction (Edmans et al., 2018). Edmans (2011) reveals positive abnormal returns related to employee satisfaction of the "100 Best Companies to Work for in America" and concludes that specific SRI screens may increase stock returns. Manescu (2011) finds a positive effect in terms of the relationship between job satisfaction and firm value.

It is reasonable to assume that the measure of financial performance that results from CSR activities is not the accounting output but the stock returns in the Japanese stock market. Stock returns provide the most straightforward measure of firm value and many market players use stock returns as the most primary and simplest measure of success. In Japan, there are few empirical results about the relationship between CSR performance and stock performance. Hence, we analyze stock returns and consider the effect of five CSR categories: governance, customer, community, employee, and environmental. We then compare the similarities and differences in the financial performance of CSR-active firms, that is, firms which exhibit active CSR behavior. Thus, we formulate our first hypothesis.

H1: activities result in better stock performance, but the strength of the effect differs depending on the category of CSR activities.

As Eccles et al. (2014) contend, building good stakeholder relations depends on mutual respect, trust, and cooperation, and this process generally requires a long period. Moreover, stakeholder engagement leads to the adoption of a longer-term time horizon because typically, there are short-term trade-offs in meeting the needs of different stakeholder groups. To construct and maintain mutual trust and cooperation, firms must, over a longer time horizon, commit to the fulfilment and balancing of explicit and implicit stakeholder interests (Deng, Kang, & Low,

2013). This alignment between the firm and its stakeholders contributes to the firm's long-term profitability (Freeman, Wicks, & Parmar, 2004). A firm devoted to CSR creates long-term value by building the loyalty of customers, suppliers, creditors, and the community. As a result, this alignment requires that stakeholders have a long-term perspective as well.

In the same line, Bénabou and Tirole (2010) argue that long-term investors are natural monitors who can ensure that managers choose the level of CSR that maximizes shareholder value. As argued by Gaspar et al. (2005), long-term institutional shareholders have a strong incentive to monitor the firm's management. In addition, Chen et al. (2007) propose that long-term investors have lower costs and higher benefits than short-term investors and, moreover, long-term investors engage in more monitoring. Nguyen et al. (2017) confirm that long-term investors increase shareholder value for companies undertaking CSR activities. This is interesting in light of Edmans et al.'s (2018) argument that employee satisfaction has value but that the market does not immediately capitalize it. Edmans (2011) also reports that the value of even the best firm in the U.S. is not adequately capitalized by the market until four or five years later, despite the U.S. having the most efficient stock markets.

Because investment horizon matters, particularly long-term investment, we investigate how various investment terms affect CSR-active stock returns and CSR activities. Thus, we study the following hypothesis.

H2: Long- term investments show higher CSR-active stock returns.

While Japanese firms have been expanding their business into foreign countries, the subject of CSR has been growing in importance worldwide. Global firms in several fields are under increasing scrutiny. The range of socially responsible issues that they are required to

address has widened to include ethical, social, and working conditions, environmental concerns, sustainable development issues (Kolk, 2016). Some scholars maintain that global firms should be accountable to a broader range of CSR stakeholders who all enable their existence and growth (Enderwick, 2017).

Others have highlighted that social consumer preferences drive CSR and that socially responsible consumers are loyal and committed (Kitzmueller & Shimshack, 2012). CSR is the signal of orientation toward higher-quality products and consumers realize that only firms that focus on product quality are willing to invest in CSR activities. Therefore, by engaging in CSR, firms can claim to offer high-quality products (Fishman et al., 2008). According to a survey by Mori (2003), more than half of American consumers say that a firm's social reputation influences their purchase decisions; moreover, 70% of UK consumers state that they prefer to deal with firms that they perceive as ethically superior. Epstein and Reeves (2010) show that 88% of consumers think companies should try to achieve their business goal while improving social and environmental conditions and 83% think companies should support financial donations. The socially responsible consumers take into consideration CSR activities by firms when making purchase decisions (Berland, 2010). In fact, it has been found that consumer firm assessment, product evaluation, final consumption decision, and willingness to pay also depend on the firm's CSR track record. Consumers appear to bear at least some of the cost of CSR. Moreover, as Servaes and Tomayo (2013) point out, socially responsible consumers' purchasing behavior affects a company's financial performance and ultimately, firm value. Empirical evidence of the positive impact of socially responsible consumer behavior on stock performance was stronger in the emerging markets and Europe, but weaker in the U.S. (Giese et al., 2019).

Tsai and Child (1997) show that global firms have the potential to function as a mechanism for the upward harmonization of CSR standards internationally. Furthermore, global firms can act as moral hazard agents aiming to spread a social development model and improve social maturity for the betterment of wider communities (Collier & Wanderly, 2005). Hence, we check stock returns related to CSR activities by sales regions, as reported by Blasi, Caporin, and Fontini (2018). Stock returns also depend on the CSR categories in which firms invest. The foregoing leads to the following hypothesis.

H3: Stock performance of CSR-active firms improves depending on consumers' preference for CSR in the regions where they operate their overseas businesses.

Global institutional investment provides a channel for promoting better governance and convergence in governance practices across countries. Global investors potentially influence firms either directly, by influencing the management and using voting rights ("voice"), or indirectly, by their decisions to buy or threaten to sell their shares ("voting with their feet") (Aggarwal, Erel, Ferreira, & Matos, 2011). In the Tokyo market, foreign investors expect Japanese firms to maximize returns on investments through strong corporate governance. Ferreia and Motos (2008) find that foreign institutional ownership is positively associated with firm value and performance outside of the U.S. In Krüger (2015), foreign investors are the main enforcers of management discipline by exercising voice (voting) and leaving (selling stocks). Gillan and Starks (2003) highlight the unique role that foreign institutional investors play in promoting change in corporate governance practices worldwide, and foreign institutions are often credited with taking a more active stance, while domestic institutions that have strong business relations with local corporations are less active governance. Improved governance

mechanisms result in more cashflow for stockholders (Jensen, 1986) and better corporate governance leads to greater firm values and higher stock returns (Gonper et al., 2003).

As CSR is one of several strategic tools available to managers. Manager's actions are disciplined by the investors who lead good corporate governance. Foreign investors empower socially responsible firms to boost CSR performance through improved corporate governance, for example; promoting the information disclosure of CSR reporting and review of CSR activities. Harjoto et al. (2017) find a positive relationship between CSR and financial performance when firms consider their CSR practices and levels of governance. Suto and Takehara (2018) shows that the relationship between foreign ownership and CSR performance is positive in Japan. Furthermore, several studies investigate the relationship between foreign ownership and environmental performance and find a positive relationship (Seroa da Motta, 2006)[2]. These benefits suggest that firms with high levels of CSR activities relating to high ratios of foreign investors are likely to exhibit better stock performance.

H4: More foreign investment into CSR-active firms results in better stock performance.

3. Empirical Analyses

3.1. Data and Methodology

We collected all available Japanese CSR score data from GoodBankers© (GB), an independent advisory firm specializing in social investment research in Japan (See Appendix 2), from 2004 to 2015. The CSR data were divided into five categories: "governance," supply and

[2] Several studies investigated the relationship between foreign ownership and CSR performance and find a negative relationship (Kyu-Hong and Rock, 1999) and no significant relationship (Porgal and Wheeler, 1996).

consumption procedures ("customer"), social activities ("community"), "employees," and the environment ("eco"). The CSR scores that we used are published once a year. We calculated long-term CSR scores of more than two years from the average of the annual scores. For a robustness test, we collected Japanese CSR score data from the Thomson Reuters Asset4 database. Detailed information about Asset4 is Appendix 3. We adjusted the CSR categories of Asset4 based on the GB categories, "Environment"; including Emissions, Resource Use, and Environmental Innovation, "Governance"; including Shareholders, Management, and CSR Strategy, "Customer"; including Product Responsibility and Human Rights and "Community." The number of companies covered by the Asset4 CSR score is only half of the number covered in the GB data.

Accounting data are retrieved from the Nikkei Financial Quest and QUICK databases. Stock data are from the QUICK database. Ownership data for foreign investors are taken from the Nikkei Financial Quest database.

In our sample, a CSR-active firm, which has covered by the respective CSR database, must have regular common stock listed on the Tokyo stock market and have accounting data based on the Japanese yen. The observations that were greater or lower than the 1st or 99th percentiles are omitted to remove any potential outliers. We calculated the excess adjusted returns as raw stock returns minus the Industrial Price Index return, to mitigate macroeconomic effects and industry-specific effects. Our study also controls for year-industry fixed effects. We used annual returns. Moreover, long-term annual returns were calculated from average annual returns over three or five years. In addition, the Fama–French three-factor model with momentum (i.e., the Carhart (1997) four factor model) and the five-factor model from the

Kenneth French website[3] were employed. We mainly employ the four factors of the Carhart model as Edmans et al. (2018) find that it is more effective for controlling stock momentum in the context of CSR analysis. This related index is converted to yen following the dollar–yen exchange rate, despite the original index being dollar-based.

We consider three long term investment horizons, namely, one year, three years and five years. Nguyen, Kecskés, and Mansi (2017) define long-term investors as those with a portfolio turnover of 35% or less, which means that the investment horizon of long-term investors is more than 3 years. To investigate the relationship between CSR activities and long-term stock performance, we apply the following methodology.

Before the hypotheses investigation, to answer our initial research question regarding the overall landscape of CSR activities in Japan, we apply the empirical method of principal component analysis (PCA) and specify principal components.

To investigate hypotheses H1 - H4 empirically, we estimated the abnormal returns (alpha) effects using the four-factor Carhart model and five-factor models. Also, in the regression models, the explanatory variable of interest is the CSR scores. All independent variables are lagged by one year to examine the relationship between the explanatory variables and future stock returns. Moreover, we used dynamic panel regression/GMM, two-stage least squares (2SLS) regression to accommodate for endogeneity problems, and Heckman's two-stage regression model (Heckit) to ensure robustness and resolve the selection bias issue, as pointed out by Wu and Shen (2013); there is a selection bias problem in CSR empirical analyses. Concerning 2SLS regression, for the robustness of endogeneity, the first instrumental variable is the average of industrial CSR scores, lagged and second-lagged CSR scores. This is done

[3] http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

because El Ghoul et al. (2011) suggest that firm CSR activities are influenced by the CSR activities of comparable firms in the same industry. The second instrumental variable is the average of CSR scores for 10 groups. We calculate the 10 groups' CSR scores based on sorting firm observations into 10 groups depending on the firm size.

3.2. Sample Description

Table 1 presents an outline of the CSR data from 2004 to 2015. The description of governance concentrates on corporate governance and compliance. Customer includes consumer management, supply chains, procedural management, caring for developing countries, and caring for local people. Community addresses societal activities. The employee category considers capacity development, career development support, and labor unions. Finally, the eco category relates to environmental management. Table 1 refer to the number of CSR scores and the average of CSR sore.

【Insert Table 1 around here】

Panel A of Table 2 presents the basic descriptive statistics.

【Insert Table 2 around here】

Figure 2 illustrates the relationship between the CSR scores and the stock returns for governance, customer, community, employee, and eco. The stock returns are likely to positively correlated with CSR scores.

【Insert Figure 2 around here】

As an alternative source of CSR data, we employ Asset4 from Thomson Reuters (see Appendix 3). Alternative data is investigated to verify the robustness of Japanese local CSR data; BG score data.

4. Empirical Results

4.1. What is the whole picture of CSR activities in Japan?

First, we examine integrated CSR performance using BG score data. We empirically integrate the five kinds of CSR scores using the PCA method. Panel A of Table 3 presents the PCA results, namely, five principal components (PC), eigenvalues, proportions, and cumulative values are identified. Since only the eigenvalue of PC 1 is greater than one, the cumulative value from PC 1 to PC 2 is above 0.90 and the variation of the categorized CSR score explains almost 90% of the observed variance, we restrict our attention to the first components, namely, PC, PC 1, and PC 2.

Panel B of Table 3 presents the correlations and Z statistics (in parentheses) associated with the PCA sorted by PCs and categories. Almost all categories have a similar and statistically significant correlation with PC 1; thus, PC 1 may be regarded as a represented well-balanced company. Accordingly, we name PC 1 “Well balanced." Since PC1 is significant and only the

eigenvalue of PC 1 is significant, we can analyze every CSR-category using the well-balanced PC and this investigation by category can be progressed[4].

For robustness, using an alternative CSR measure; the Asset4 score, we check the results of the PC analysis. In Panel A of Table 3, Asset4 results show that only the eigenvalue of PC 1 is larger than one, which is similar to the BG results. Furthermore, in Panel B of Table 3, the Asset4 results indicate that PC 1 is significant and shows well-balanced attributes, also in line with the BG results.

4.2. Do CSR Activities Improve a Stock's Short-term Performance?

Before discussing the financial performance of CSR-active firms, we first consider the factors that affect CSR-active firms. Appendix 2 presents the results of the logit model. To identify CSR-active firms, the dependent variable is binary. Notably, we observe significantly positive relationships between CSR-active firms and the firm size (msize), with the firm size as the most important factor to explain CSR activities.

Panel B of Table 2 presents the mean differences between CSR-active and non-CSR-active stock returns. We find that the average return of CSR-active stocks is higher than for non-CSR-active stocks. However, this result is not significant for results analyzing one-year returns, which suggests that a more extended period is needed to acquire an accurate valuation from the stock market.

Firstly, we focus on the short term retunes, one-year returns. Table 4 presents the results of the effects of the abnormal returns (alpha) levels of CSR-active stocks annually based on the four-factors of the Carhart regression and the five-factor model regression using monthly return

[4] Although the eigenvalue of PC 2 is less than one, so it is insignificant, it looks like PC2 reflects an excellent environment score with weak governance.

data[5]. The results ([1]-[5] in Panel A of Table 4) show that the coefficients of abnormal returns in the four-factor Carhart model with industry dummies and year dummies are significantly positive. However, the coefficients of abnormal returns in the five-factor model and with/without year dummies (Panel B of Table 4) and a four-factor model without year dummies ([7]-[11] in Panel A of Table 4) are also positive, but only significant at the 10% level.

We must exercise caution when analyzing this finding as the results strongly depend on the market model used and because, as Nguyen et al. (2017) note, the magnitude of abnormal returns when computing from the Fama–French factors model may be overestimated.

Another problem is that almost all CSR-active firms are big Japanese listed companies. As shown before, the choice of CSR activities is affected by firm size, Drempetic et al. (2019) find that firm size has a highly significant influence on the ESG scores, so there may be a concern about a big company bias. To check the robustness with respect to firm size, we compare the abnormal returns (alpha) between the CSR-active firms and big companies.[6] Column [6] of Panel A and Column [6] of B in Table 4 show the results of the other big firms not engaging in CSR activities. For the big firm results, the coefficients of abnormal returns are significantly positive, and their levels are higher than the abnormal returns of CSR-active firms. Based on this result, it seems that the effects of CSR-active stock returns may be driven by the characteristics of the big-stock effect. Comparing with the bib firms results, the effects of CSR-active firms are smaller than the general big-stock effect. Our positive abnormal returns capture systematic returns that are not captured by some idiosyncratic returns and model risks. It should be noted that this factor model method reflects the effectiveness of a trading strategy that is

[5]. We estimated the abnormal returns (alpha) by using monthly data. Results are almost the same as the results using annual data.

[6] We determine and calculate the big company as those with the top 30% of asset volumes among all listed Japanese firms during our research term.

based on CSR. However, if market participants recognize the effectiveness of the CSR factor and act based on this information, no abnormal return should be observed (Edmans, 2011).

【Insert Table 4 around here】

Additionally, we check the average treatment effects (ATE) of one-year adjusted returns using propensity score matching (PSM). Appendix 2 presents the results. Almost all ATEs are not significant.

For the robustness check, we estimate the relationship between one-year adjusted returns and CSR scores as shown in Table 5, where Panel A presents the results of OLS. The results show that the CSR score is significantly positive for the eco categories; however, both are only significant at the 10% level. We use dynamic panel regression to consider the impact over time, as highlighted by Blasi et al. (2018), and performance persistence problems, as empirically shown by El Ghoul and Karoui (2017). Panel B of Table 5 presents the results of this regression, where the dependent variable is one-year stock adjusted returns; the independent variables are lagged returns, CSR score, market size, Q ratio, and other features. The results show that CSR scores are significantly negative. We may say that CSR effects are not significant but also negative effects for short-term (one year) investments. In the next section, we show the results for the long-term investments, namely, an investment horizon above three years.

【Insert Table 5 around here】

4.3. Do CSR Activities Improve Stock Long-term Performance?

Panel A of Table 6 presents the results of long-term adjusted stock returns, which are calculated from each firm's stock return minus the corresponding industry returns, and the findings are presented for three and five years. The dependent variable is long-term CSR-active adjusted stock returns. The independent variables are CSR scores together with many control variables: firm characteristics (market size, Q ratio, leverage, dividend yields, forecast of profitability, prior returns, volatility, volume of trading, and exchange rate), as used by Brennan, Chordia, and Subrahmanyam (1998) and Blasi et al. (2018), and the foreign investor ratio as the corporate-governance variable. The long-term stock return regression includes the forecast of profitability as an independent variable, because, as shown by Blasi et al. (2018), performance based on the stock market represents investors' evaluation of a firm's ability to generate future profits. The most important variable, however, is the CSR score. We focus on the coefficients of this variable. The CSR score coefficient in Panel A of Table 6 is significantly positive for the three-year and five-year investment term for the community, employee, and eco categories and significantly positive only for the community category at a 10% significance level. Long-term CSR-active stocks which exhibit strong CSR measures in the employee and eco categories show exceptional long-term stock market performance. The governance and customer categories are not significant for any investment terms. It is of note that this result for governance differs from that of Krüger (2015).

Panel B of Table 6 shows the regression results using the alternative CSR score, Asset4. The results for the employee, community, and eco categories for the three-year and five-year horizons were positive and significant, following the main results using the BG score. However, customer is not significant.

【Insert Table 6 around here】

4.4. The Robustness of CSR Activities and Long-Term Stock Performance

We now check the robustness of the empirical results on the relationship between the CSR scores and stock returns in several ways, as our results may be driven by unobserved firm-level heterogeneity.

First, we consider the endogeneity problem by using 2SLS regression with an instrumental variable (IV) to address the reverse causality and omitted variable concerns. The IV should capture the CSR score but be exogenous to stock returns. Table 7 shows the results of the long-term 2SLS regression using IVs. The IVs of Panel A in Table 7 are the averaged industrial CSR score and CSR lagged scores, similar to the methods followed by El Ghoul et al. (2011). The IVs in Panel B of Table 7 are the average of categorized firm-sized CSR scores and averaged industrial CSR scores, and the IVs in Panel C are the lagged values, t-1 and t-2, of the CSR score. Drempetic et al. (2019) find that firm size has a highly significant influence on the ESG scores. We confirm the causality issues between stock returns and CSR scores, the relationship between industries and CSR, and the relationship between firm size and CSR. Margolis et al. (2009) point out that the positive correlation between CSR and corporate financial performance is at least as attributable to causation of corporate financial performance to CSR.

The results in Table 7 only show the CSR score coefficients. CSR scores are significantly positive for three to seven-year investment terms for the community, employee, and eco categories.

【Insert Table 7 around here】

Next, we consider the selection bias problem in the case of CSR. To deal with potential issues in this regard, we use the Heckit model, that is, Heckman's two-stage regression model, as shown by Wu and Shen (2013) for the case of CSR.[7] Table 8 presents the results of the long-term regression using the Heckit model. As a first stage, we use the logit model to estimate setting the independent variable as one for CSR-active stocks and otherwise zero. As a second stage estimation, we regress the long-term CSR returns against Mills lambda ratio, considering the conditional effects of the logit regression. Panel B of Table 8 only shows the CSR score coefficients and the inverse Mills ratios for the five- and seven-year investment terms. Almost all the results are similar to the prior simple ordinary least squares (OLS) regression; furthermore, the inverse Mills ratios are significantly positive. These findings imply that those stock returns related to CSR are determined as a condition of whether they are CSR-active. Additionally, a high CSR score makes a CSR-active stock perform significantly better in the employee and eco categories for a three-year investment horizon, which is shown by the coefficients of CSR score in Panel A and Panel B of Table 8. The significance of the investment terms depends on the categories; for example, it is positively significant for the eco categories, but community and employee are not significant, and customer is negatively significant. It seems that the reason customer shows negative values is owing to how scoring works at the firm determining the scores. By meeting the firms, we discovered that the number of questions from GB (scoring agency) to CSR firms about the customer is relatively small, which means that it is challenging to acquire enough CSR information about the customer; supply-chain, etc. Additionally, we applied the Fama-Macbeth four factor regression and find that the only positively significant

[7] These authors do not use logistic regression as the first regression but multi-nominal regression for CSR analysis. The multi-nominal regression is the advanced regression of the logistic regression and we apply their methodology.

CSR activities are related to the employee and eco categories (Appendix 4). In sum, in the employee and eco CSR categories, CSR scores are useful for increasing stock returns.

【Insert Table 8 around here】

4.5. CSR-Stock Performance during Global Financial Crises

In this section, we try additional investigation that the relationship between SRI and stock performance is dependent on the periods being considered (Mollet & Ziegler, 2014). Lins et al. (2017) indicate that CSR positively and strongly affected stock returns during the global financial crises when financial markets declined. Huppe (2011) also finds a significant positive relationship between CSR and investment performance; however, the results depend on the period. The SRI portfolios perform better during financial crisis periods, in which investors who demand downside protection are at an advantage (Nofsinger & Varma, 2014). To examine whether the estimation results differ over time (e.g., due to changing macro-economic conditions or changing characteristics of market participants), we check the effects of the 2008 global financial crisis period.

We investigate the relationship between adjusted long-term returns and the CSR score. Panel A of Table 9 presents the results during the Global Crisis of 2008−2012. Panel B presents the results after the crisis; however, for this period, we have only three-year investment results and not five-year results. The results are reported only for the CSR score coefficients. Interestingly, the coefficients of scores in Panel A of Table 9 during the crisis are positive and significant. However, after the crisis, the score coefficients become insignificant in Panel B. We infer that CSR firms do not need to work on CSR activities as much to acquire their desired

reputation from the market. After the crisis period, with better market conditions and profitability for all Japanese firms, almost all CSR firms recorded higher stock returns without making CSR efforts. This result is consistent with other recent studies, for example, that of Yuyama et al. (2018). In sum, there would be a possibility that CSR activities is a kind of insurance from down-side risk when the markets being under crushed.

【Insert Table 9 around here】

4.6. Does the relationship between CSR and stock performance depend on the region for multinational firms?

In Table 10, we re-examine the results in detail by sales regions to measure multinational firm effects. The overseas consumer faces regional social problems; for example, in the developing countries, they are suffering from poverty and political uncertainty, in Europe, they are interested in the emission of CO_2. Multinational firms operate sales depending on the social problems of the overseas region. In this study, we consider the difference between regions. Our empirical results are reported only for the CSR score coefficients in Table 10. Across the regions, the CSR scores of the employee categories are significantly positive for long-term investments. However, some specific characteristics depend on the regions.

【Insert Table 10 around here】

In Europe, the CSR scores of the eco category are significantly positive. In contrast, in the developing countries which comprise Mediterranean, African, and South American regions, the

CSR scores of the community category are significantly positive. CSR firms that operate their business and CSR activities consistent with the social needs of local customers record higher stock returns. In Europe, multinational CSR firms operate their business with a high eco score driving higher stock returns. In developing countries, multinational CSR firms operate their business with high community scores driving higher stock returns. Similarly, at the global scale, all multinational CSR firms with high employee scores exhibit higher stock returns.

On the other hand, all the customer categories are negatively significant. We believe one of the reasons is the aforementioned problem of scoring methodology. Another possible explanation is that investors recognize the higher supply-chain costs. Although in South America, governance categories are positively significant, there is another issue: the number of multinational firms isn't many and the sample only includes large firms, such as IHI, Mitsubishi Heavy Industries, Mitsui Engineering, and Shipbuilding. In sum, the effect of each CSR category depends on the sales region, and the multinational CSR-active firms which operate their business consistent with local customer's social needs register higher stock returns.

4.7. Do firms with Good Governance CSR Display Better Stock Performance?

Panel A of Table 11 presents the results of long-term stock returns using the foreign investor ratio, divided into above-average and below-average ratios. The results are reported only for the CSR score coefficients. For the above-average foreign investor ratio, the CSR scores are related to the performance of CSR-active stocks significantly and positively in the community, employee, and eco categories. The below-average foreign investor ratio is not significant for stock performance at all. We observe that, for the community and employee categories, CSR-active stocks with higher levels of foreign investors perform considerably better. Panel B of

Table 11 shows the results of the 2SLS regression using the instrumental variables for robustness. Almost all the results are similar to the simple OLS regression results. Here we notice, foreign investors ratio is the proxy variable of external governance and it shows significant results, however the proxy variables of internal governance, the governance score, is not significant. We may therefore say that the advantage of foreign investors, the power of external governance, require good corporate governance from CSR firms.

【Insert Table 11 around here】

5. Conclusions

Our study extends the CSR literature by providing comprehensive empirical analysis of the links between CSR and adjusted long-term stock returns. Policymakers and business practitioners will also find our insights into CSR practical and informative. Our findings can be summarized as follows. First, we find that CSR activities related to labor relations, community relations, and the environment are associated with better long-term stock performance. Moreover, during the global financial crisis, long-term stock returns had evaluated their CSR-active. Second, stocks of CSR firms with stronger corporate governance and higher foreign-investor ratios, post better stock performance over the long term. Third, it is essential for global firms to account for societal preferences in overseas sales operation regions for progressing CSR activities. Accordingly, eco-activities are capitalized only in Europe and community CSR activities are capitalized only in developing regions, although employee CSR is capitalized worldwide. In summary, we find that not only shareholder power but also stakeholder power should be considered to enhance long-term stock returns through CSR activities.

Several issues and limitations remain to be addressed, such as the mechanism explaining how CSR results in higher stock returns over the long term. Generally, to achieve higher returns, companies adopt one of two approaches: increasing the future cash flow or decreasing risk and thereby, the cost of capital. Additionally, this study does not consider alternative measures of long-term investment, such as investor turnover ratios. Another problem about methodology is that, as Nguyen et al. (2017) note, the magnitude of abnormal returns (alpha) when computing from the Fama–French factors model may be overestimated. These limitations should be addressed by future research.

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Figure 1: The average ratio of foreign investors

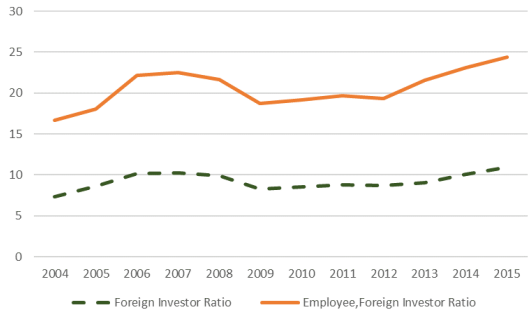

Figure 2: The average returns and scores

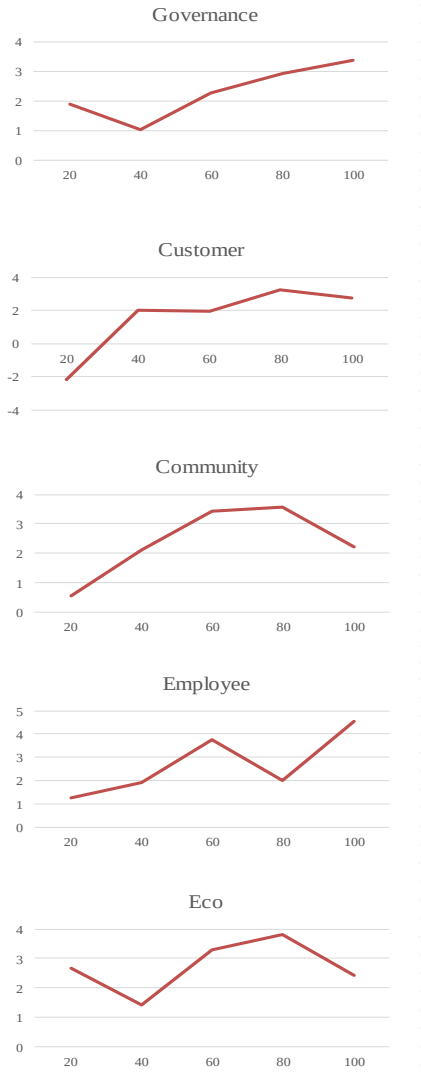

Table 1: Overview of the GB score data for CSR screening

Panel A：Frequency for the number of scores per category

	G	S			E
	Governance	Customer	Community	Employee	Eco
2004	253	278	562	655	563
2005	448	906	904	904	533
2006	681	392	674	706	628
2007	567	399	697	777	643
2008	428	414	713	728	664
2009	427	420	752	753	656
2010	421	414	798	803	666
2011	398	398	744	744	761
2012	385	389	733	732	779
2013	373	373	753	740	812
2014	409	380	908	917	815
Total	5701	5665	9156	9377	8341

Panel B：Average of score per category

	G	S			E
	Governance	Procedure	Social	Employee	Eco
2004	54.7	65.0	37.4	29.3	58.1
2005	45.8	20.2	27.0	27.0	59.6
2006	36.6	53.8	42.0	38.6	60.8
2007	47.4	59.8	44.0	38.3	60.7
2008	67.2	61.6	44.0	41.5	61.1
2009	65.9	62.6	45.5	41.2	61.6
2010	64.7	63.7	44.0	38.2	60.2
2011	65.4	67.0	50.4	42.5	57.8
2012	65.4	66.1	51.4	41.0	57.0
2013	66.9	66.5	51.4	40.1	56.1
2014	38.5	67.4	43.8	34.9	56.5

Table 2: Descriptive statistics

Panel A: Basic statistics

Variable	Obs	Mean	Std. Dev.
Score of Governance	5705	52.651	25.739
Score of Customer	5635	52.374	31.844
Score of Community	9163	43.254	28.518
Score of Employee	9382	37.207	28.769
Score of Eco	8347	58.646	23.163
Return:1 year	29731	4.695	30.928
Return:3 years	25029	1.618	15.063
Return:5 years	17692	1.833	10.746
The ratio of Foreign Investor	36761	9.309	11.370
The ratio of Oversea's sales	15152	32.517	22.539
ROA	40290	5.586	5.518
ln(marketprice)	39879	23.592	1.686
Leverage	40326	50.199	20.042
Q ratio	38478	1.179	0.719
Divident Yield	38885	1.764	1.255
Forecast of profitability	14986	22.626	77.312
volalitity	33697	0.010	0.013
ln(trading volume)	38526	20.266	2.519
The change ratio of exchange rate	41829	0.364	10.047

Panel B: t-tests between CSR-active and non-CSR-active stock returns

		Governance	Customer	Community	Employee	Eco
1Y	Non-CSR	1.680	1.818	1.633	1.644	1.442
	CSR	2.473	1.719	2.327	2.281	3.068
	difference T test	(0.10)	(0.84)	(0.09)	(0.11)	(0.00) **
3Y	Non-CSR	-0.726	-0.556	-0.888	-0.886	-0.926
	CSR	1.678	0.780	1.157	1.101	1.476
	difference T test	(0.00) **	(0.00) **	(0.00) **	(0.00) **	(0.00) **
5Y	Non-CSR	0.748	0.834	0.708	0.705	0.730
	CSR	1.828	1.444	1.509	1.491	1.539
	difference T test	(0.00) **	(0.00) **	(0.00) **	(0.00) **	(0.00) **

z-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 3: The results of PCA

Panel A: Eigenvalues of PCA

	GB Score			Asset4 Score		
VARIABLES	Eigenvalues	Proportion	Cumulative	Eigenvalues	Proportion	Cumulative
PC1	3.600	0.720	0.720	3.090	0.618	0.618
PC2	0.613	0.123	0.843	0.658	0.132	0.750
PC3	0.318	0.064	0.906	0.540	0.108	0.858
PC4	0.310	0.062	0.968	0.414	0.083	0.941
PC5	0.158	0.032	1.000	0.297	0.060	1.000

Panel B: Correlation and Z-statistics

	GB Score		Asset4 Score
	PC1 Well-balanced	PC2 Environment with poor Governance	PC1 Well-balanced
Categories	(1)	(2)	(3)
Governance	0.424***	-0.577***	0.385***
	(78.18)	(-38.09)	(54.79)
Customer	0.455***	-0.164***	0.400***
	(103.5)	(-8.491)	(98.00)
Community	0.473***	0.102***	0.414***
	(125.6)	(6.363)	(64.64)
Employee	0.487***	-0.0751***	0.492***
	(151.3)	(-6.127)	(115.0)
Eco	0.390***	0.790***	0.481***
	(61.68)	(72.96)	(104.1)

Robust z-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4: Effects of abnormal returns (alpha) of CSR-active stocks using monthly return

Panel A: Carhart's four-factor model

	G	S			E	Big Firm
	Governance	Customer	Community	Employee	Eco	
Variable	[1]	[2]	[3]	[4]	[5]	[6]
α	1.8574 ***	1.3753 **	1.438 ***	1.6785 ***	1.5887 ***	2.396***
	(3.03)	(2.19)	(3.09)	(3.94)	(4.31)	(6.689)
mkt	0.6847 ***	0.7164 ***	0.6929 ***	0.6869 ***	0.699 ***	0.486***
	(78.89)	(81.97)	(97.42)	(97.21)	(93.17)	(87.36)
smb	-0.4951 ***	-0.4725 ***	-0.4427 ***	-0.4342 ***	-0.4691 ***	-0.0306***
	-(37.00)	-(34.93)	-(40.68)	-(40.29)	-(40.87)	(-3.598)
hml	-0.5412 ***	-0.6224 ***	-0.5768 ***	-0.5773 ***	-0.5521 ***	-0.534***
	-(42.12)	-(49.33)	-(54.80)	-(55.26)	-(49.97)	(-68.55)
wml	-0.2876 ***	-0.2946 ***	-0.2844 ***	-0.2843 ***	-0.2878 ***	-0.318***
	-(24.79)	-(24.64)	-(29.39)	-(29.63)	-(28.70)	(-43.42)
Year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Observations	58432	57180	91856	93819	84693	216571
R-squared	0.2549	0.2626	0.2375	0.2349	0.2408	0.1057
	[7]	[8]	[9]	[10]	[11]	[12]
α	1.121 *	0.6532	0.5391	0.743 *	0.6879 *	1.017***
	(1.88)	(1.07)	(1.18)	(1.78)	(1.92)	(2.911)
mkt	0.6896 ***	0.7189 ***	0.6997 ***	0.6945 ***	0.7073 ***	0.499***
	(81.32)	(83.65)	(100.18)	(100.14)	(96.29)	(91.59)
smb	-0.4988 ***	-0.4797 ***	-0.4439 ***	-0.4354 ***	-0.469 ***	-0.00943
	-(40.65)	-(38.79)	-(44.47)	-(43.98)	-(44.22)	(-1.204)
hml	-0.557 ***	-0.632 ***	-0.592 ***	-0.5929 ***	-0.5707 ***	-0.581***
	-(44.63)	-(51.36)	-(58.03)	-(58.54)	-(53.36)	(-76.81)
wml	-0.2946 ***	-0.3002 ***	-0.2955 ***	-0.2953 ***	-0.2994 ***	-0.340***
	-(26.29)	-(25.86)	-(31.60)	-(31.82)	-(30.90)	(-48.09)
Year FE	NO	NO	NO	NO	NO	NO
Industry FE	YES	YES	YES	YES	YES	YES
Observations	58432	57180	91856	93819	84693	216,571
R-squared	0.2517	0.2597	0.2334	0.2307	0.2365	0.098

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Panel B: Kenneth French's five-factor model

	G	S			E	Big Firm
	Governance	Customer	Community	Employee	Eco	
Variable	[1]	[2]	[3]	[4]	[5]	[6]
α	1.0501 *	0.5398	0.5541	0.791 *	0.7236 *	1.303***
	(1.69)	(0.84)	(1.18)	(1.84)	(1.95)	(3.708)
mkt	0.8001 ***	0.8121 ***	0.813 ***	0.8107 ***	0.8188 ***	0.681***
	(93.18)	(95.11)	(115.94)	(116.19)	(110.78)	(118.0)
smb	-0.108 ***	-0.0948 ***	-0.0365 ***	-0.0281 **	-0.0548 ***	0.493***
	-(7.62)	-(6.62)	-(3.21)	-(2.49)	-(4.60)	(54.71)
hml	-0.1075 ***	-0.1303 ***	-0.0986 ***	-0.1006 ***	-0.0782 ***	-0.132***
	-(6.39)	-(7.79)	-(7.12)	-(7.30)	-(5.36)	(-13.31)
rmw	-0.9489 ***	-0.9667 ***	-1.0137 ***	-1.016 ***	-1.0072 ***	-1.152***
	-(46.52)	-(46.47)	-(63.37)	-(63.82)	-(60.44)	(-88.40)
cma	-0.5766 ***	-0.5833 ***	-0.6027 ***	-0.6045 ***	-0.6248 ***	-0.655***
	-(29.08)	-(28.57)	-(36.93)	-(37.29)	-(36.43)	(-53.75)
Year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Observations	58432	57180	91856	93819	84693	216571
R-squared	0.2941	0.3033	0.2814	0.2788	0.2843	0.158
	[7]	[8]	[9]	[10]	[11]	[12]
α	1.2005 **	0.6321	0.5008	0.7187 *	0.5981 *	0.775**
	(1.97)	(1.00)	(1.08)	(1.70)	(1.65)	(2.262)
mkt	0.8042 ***	0.8134 ***	0.8184 ***	0.8165 ***	0.8254 ***	0.692***
	(95.50)	(96.54)	(118.80)	(119.19)	(113.99)	(123.4)
smb	-0.0885 ***	-0.0785 ***	-0.0172	-0.0084	-0.0349 ***	0.527***
	-(6.51)	-(5.78)	-(1.59)	-(0.78)	-(3.04)	(61.68)
hml	-0.118 ***	-0.138 ***	-0.1086 ***	-0.1099 ***	-0.0866 ***	-0.167***
	-(7.09)	-(8.34)	-(7.96)	-(8.09)	-(6.02)	(-16.95)
rmw	-0.9652 ***	-0.9839 ***	-1.0358 ***	-1.0382 ***	-1.029 ***	-1.195***
	-(49.43)	-(49.47)	-(67.44)	-(68.00)	-(64.17)	(-96.40)
cma	-0.5764 ***	-0.5774 ***	-0.5984 ***	-0.6018 ***	-0.624 ***	-0.649***
	-(30.03)	-(29.10)	-(37.62)	-(38.07)	-(37.26)	(-55.06)
Year FE	NO	NO	NO	NO	NO	NO
Industry FE	YES	YES	YES	YES	YES	YES
Observations	58432	57180	91856	93819	84693	216571
R-squared	0.2923	0.3017	0.2796	0.2769	0.2825	0.155

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 5: Regression of one-year return and CSR score

Panel A: OLS regression

	G	S			E
Variable	Governance	Customer	Community	Employee	Eco
score	-0.0269	-0.0111	0.0209	0.0181	0.0324*
	(-1.456)	(-0.674)	(1.461)	(1.351)	(1.825)
Observations	3,745	3,632	5,893	6,028	5,423
R-squared	0.111	0.144	0.108	0.108	0.096
Control	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES

Panel B: Dynamic panel regression

	G	S			E
Variable	Governance	Customer	Community	Employee	Eco
L.f1y	-0.0702*	-0.0717*	-0.0547**	-0.0411*	-0.0526**
	(-1.932)	(-1.830)	(-2.338)	(-1.818)	(-2.170)
score	-0.0959**	-0.298***	-0.448***	-0.170***	-0.564***
	(-2.275)	(-4.472)	(-8.259)	(-3.142)	(-3.697)
msize	-47.60***	-48.71***	-52.42***	-52.64***	-49.16***
	(-10.92)	(-10.34)	(-15.95)	(-16.22)	(-15.32)
q	-11.54***	-12.55**	-8.537***	-4.507	-7.671**
	(-2.602)	(-2.366)	(-2.813)	(-1.481)	(-2.271)
lev	0.139	0.0649	0.536***	0.752***	0.728***
	(0.744)	(0.342)	(3.575)	(5.129)	(5.034)
divyld	-3.529***	-2.837***	-1.870**	-3.481***	-3.564***
	(-3.472)	(-2.729)	(-2.362)	(-4.400)	(-4.356)
forecst	-0.00227	0.000948	0.00238	0.000341	0.00140
	(-0.360)	(0.139)	(0.451)	(0.0641)	(0.269)
vol	-242.1***	-245.6***	-300.0***	-288.1***	-253.8***
	(-3.101)	(-3.062)	(-5.278)	(-5.190)	(-4.336)
lvolm	0.358	0.987	1.517	0.543	-0.137
	(0.230)	(0.595)	(1.368)	(0.494)	(-0.125)
Exchang	0.443***	0.536***	0.593***	0.545***	0.593***
	(5.678)	(6.562)	(10.87)	(10.34)	(10.84)
Frgn	0.0691	0.226	0.212	0.0780	0.105
	(0.324)	(0.998)	(1.434)	(0.533)	(0.726)
Observations	2,131	1,956	4,093	4,219	4,007

z-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 6: Regression of long-term CSR-active return

Panel A: GB data set

	G	S			E
Variable	Governance	Customer	Community	Employee	Eco
Three year					
CSR score	0.00620	-0.00832	0.0158*	0.0186**	0.0239**
	(0.591)	(-0.783)	(1.776)	(2.255)	(2.190)
msize	1.957***	2.496***	2.115***	2.230***	2.044***
	(4.247)	(5.113)	(5.539)	(5.872)	(5.371)
q	3.665***	2.868***	3.572***	3.304***	5.048***
	(4.686)	(3.529)	(5.737)	(5.611)	(7.549)
lev	0.0220	0.0273*	0.0222*	0.0217*	0.0428***
	(1.615)	(1.916)	(1.939)	(1.923)	(3.605)
divyld	-0.601	-0.540	-0.624**	-0.687**	-0.497*
	(-1.634)	(-1.385)	(-2.104)	(-2.347)	(-1.661)
forecst	0.0563***	0.0554***	0.0518***	0.0529***	0.0480***
	(6.906)	(6.775)	(8.641)	(8.817)	(8.081)
ret112	-5.858***	-5.479***	-5.464***	-5.516***	-6.129***
	(-6.102)	(-5.369)	(-7.228)	(-7.396)	(-7.266)
vol	-78.42	-2.690	-79.86*	-80.55*	-26.01
	(-1.318)	(-0.0415)	(-1.725)	(-1.778)	(-0.545)
lvolm	-1.244***	-1.287***	-1.229***	-1.257***	-1.539***
	(-3.850)	(-3.657)	(-4.654)	(-4.828)	(-5.685)
Exchange	-0.0804	-0.0715	0.00233	0.0153	-0.130
	(-0.573)	(-0.480)	(0.0189)	(0.125)	(-1.047)
Frgn	0.0465*	0.0557**	0.0353*	0.0342*	0.0519**
	(1.806)	(1.999)	(1.739)	(1.716)	(2.414)
Observations	2,710	2,610	4,440	4,549	4,088
R-squared	0.144	0.136	0.148	0.154	0.168
Year FE	YES	YES	YES	YES	YES
Five year					
score	0.0114	-0.0107	0.0141*	0.0211***	0.0215**
	(1.308)	(-1.268)	(1.876)	(3.110)	(2.389)
Observations	2,119	2,005	3,315	3,427	2,983
R-squared	0.177	0.180	0.196	0.198	0.215
Control	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Panel B: Asset4 data set

	G	S			E
Three year	Governance	Customer	Community	Employee	Eco
score	-0.00247	0.0105	0.0282**	0.0206**	0.0124***
	(-0.459)	(1.460)	(2.194)	(2.098)	(2.793)
Observations	2,379	2,379	2,379	2,379	2,379
R-squared	0.150	0.150	0.152	0.151	0.152
Control	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES
Five year					
score	-0.00538	0.0116	0.0190	0.0209**	0.0136***
	(-0.897)	(1.503)	(1.398)	(2.008)	(2.904)
Observations	1,409	1,409	1,409	1,409	1,409
R-squared	0.188	0.189	0.189	0.190	0.192
Control	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 7: Long-term 2SLS regression for robustness

Panel A: Average of industry scores and one-year-lagged scores as IV

	G	S			E
Variable	Governance	Customer	Community	Employee	Eco
3 year	0.0176	0.00781	0.0304***	0.0282***	0.0198
	(0.969)	(0.514)	(2.709)	(2.844)	(1.592)
5 year	0.0355**	0.0108	0.0334***	0.0329***	0.0274**
	(1.966)	(0.776)	(3.219)	(3.655)	(2.340)

Panel B: Average of firm-sized CSR scores and industry scores as IV

	G	S			E
Variable	Governance	Customer	Community	Employee	Eco
3 year	-0.0179	0.0396*	0.0841***	0.0276	0.0773***
	(-0.615)	(1.698)	(2.762)	(1.089)	(2.917)
5 year	-0.00876	0.0400**	0.0938***	0.0689***	0.0895***
	(-0.338)	(2.240)	(3.579)	(3.275)	(4.060)

Panel C: Lagged values, t-1, and t-2 of CSR scores as IVs

	G	S			E
Variable	Governance	Customer	Community	Employee	Eco
3 year	0.00806	-0.00699	0.0304***	0.0264**	0.0206
	(0.341)	(-0.420)	(2.602)	(2.575)	(1.608)
5 year	0.0208	-0.00947	0.0315***	0.0289***	0.0207*
	(0.873)	(-0.629)	(2.929)	(3.109)	(1.718)

Table 8: The long-term effects of CSR-active returns estimated using the Heckit model

Panel A: The results for a three-year investment horizon

	G	S			E
Variable	Governance	Customer	Community	Employee	Eco
Second Step					
score	0.00207	-0.0230**	0.0106	0.0109	0.0254**
	(0.165)	(-2.012)	(1.207)	(1.344)	(2.341)
msize	10.56***	10.97***	3.537***	3.590***	4.399***
	(9.923)	(10.44)	(7.861)	(8.283)	(8.559)
q	-0.183	-1.416	2.716***	2.483***	3.508***
	(-0.202)	(-1.505)	(5.119)	(4.897)	(5.780)
lev	0.0353**	0.0464**	0.0202*	0.0196*	0.0268**
	(1.981)	(2.480)	(1.741)	(1.703)	(2.152)
divyld	-0.0141	-0.0473	-0.539*	-0.657**	-0.352
	(-0.0318)	(-0.101)	(-1.844)	(-2.258)	(-1.154)
forecst	0.0607***	0.0603***	0.0532***	0.0565***	0.0521***
	(8.699)	(8.407)	(10.84)	(11.74)	(10.62)
ret112	-5.297***	-4.940***	-4.842***	-5.017***	-5.545***
	(-5.513)	(-4.902)	(-6.811)	(-7.154)	(-7.533)
vol	-44.80	28.10	-57.41	-64.42	7.577
	(-0.869)	(0.516)	(-1.401)	(-1.587)	(0.178)
lvolm	-0.888***	-0.860**	-0.926***	-1.021***	-1.313***
	(-2.762)	(-2.527)	(-3.550)	(-3.954)	(-4.944)
Exchang	-0.0899	0.00251	0.00405	0.0251	-0.126
	(-0.508)	(0.0139)	(0.0333)	(0.207)	(-0.985)
Frgn	0.0191	0.0202	-0.00251	-0.00103	0.0334
	(0.583)	(0.574)	(-0.123)	(-0.0513)	(1.518)
mills	19.42***	20.33***	3.673***	3.269***	5.910***
Year FE	YES	YES	YES	YES	YES
First Step					
msize	0.792***	0.724***	1.315***	1.347***	0.984***
	(43.03)	(40.84)	(46.63)	(46.58)	(46.26)
lev	-0.000260	3.18e-05	-0.00134	-0.00264**	-0.00769***
	(-0.273)	(0.0336)	(-1.233)	(-2.390)	(-7.702)
roa2	-0.0248***	-0.0295***	-0.0352***	-0.0339***	-0.0344***
	(-4.813)	(-5.819)	(-6.397)	(-6.153)	(-6.535)
q	-0.153***	-0.179***	-0.294***	-0.229***	-0.350***
	(-3.472)	(-4.231)	(-5.988)	(-4.726)	(-7.542)
divyld	0.0631***	0.0585***	0.0470**	0.0630***	0.0675***
	(2.983)	(2.806)	(1.972)	(2.617)	(3.137)
forecst	0.000109	0.000220	-0.000117	0.000336	0.000436*
	(0.461)	(0.957)	(-0.454)	(1.284)	(1.813)
Frgn	0.000459	0.000987	0.0129***	0.0189***	0.0191***
	(0.261)	(0.564)	(5.712)	(8.018)	(9.749)
Year FE	YES	YES	YES	YES	YES
Observations	11,038	11,053	10,414	10,358	10,547

z-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Panel B: The results for five and seven-year investment horizons

	G	S			E
Variable	Governance	Customer	Community	Employee	Eco
5 year	0.00992	-0.0199*	0.00547	0.0146**	0.0209**
	(0.776)	(-1.928)	(0.790)	(2.320)	(2.415)
mills	18.03***	15.97***	5.221***	4.786***	8.628***
7 year	0.0114	-0.00890	0.00682	0.0182***	0.0207**
	(1.263)	(-1.209)	(1.041)	(3.061)	(2.459)
mills	11.37***	9.281***	4.898***	4.555***	8.886***

z-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 9: The regression of long-term return effects during the 2008 Global Financial Crisis

Panel A: During the global crisis period (2008-2012)

	G	S			E
Variable	Governance	Customer	Community	Employee	Eco
3 year	0.00469	0.00992	0.0358***	0.0425***	0.0186
	(0.163)	(0.622)	(2.725)	(3.604)	(1.155)
5 year	-0.00614	0.00519	0.0268**	0.0261***	0.0202
	(-0.237)	(0.393)	(2.539)	(2.779)	(1.509)
Control	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES

Panel B: After the global crisis period (After 2013)

	G	S			E
Variable	Governance	Customer	Community	Employee	Eco
3 year	-0.0422	-0.0281	-0.00232	-0.0127	-0.00497
	(-0.890)	(-1.033)	(-0.104)	(-0.608)	(-0.168)
Control	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 10: The regression of long-term return effects by sales region

	G	S			E
Variable	Governance	Customer	Community	Employee	Eco
NothAmerica					
3 year	-0.00999	-0.0507***	0.00192	0.0167	0.0205
	(-0.612)	(-2.749)	(0.126)	(1.159)	(0.940)
5 year	-0.00985	-0.0412***	0.00646	0.0235**	0.00898
	(-0.760)	(-3.055)	(0.511)	(2.072)	(0.505)
Europe					
3 year	-0.000898	-0.0590***	0.00900	0.0329**	0.0406*
	(-0.0543)	(-3.058)	(0.585)	(2.255)	(1.726)
5 year	-0.00145	-0.0407***	0.0176	0.0371***	0.0499***
	(-0.109)	(-2.750)	(1.364)	(3.258)	(2.717)
Asia					
3 year	0.0157	-0.0465***	0.00480	0.0243*	0.00532
	(1.046)	(-2.816)	(0.350)	(1.929)	(0.271)
5 year	0.0125	-0.0355***	0.00534	0.0249**	0.0115
	(1.008)	(-2.789)	(0.470)	(2.496)	(0.708)
Med&Africa					
3 year	-0.0964	-0.154***	0.226***	0.202***	0.130
	(-1.355)	(-3.264)	(2.754)	(2.774)	(1.131)
5 year	0.0446	-0.101	0.297***	0.253***	0.196
	(0.608)	(-1.446)	(4.540)	(3.747)	(1.521)
South America					
3 year	0.302**	0.276***	0.416***	0.243**	0.0855
	(2.366)	(3.358)	(3.386)	(2.047)	(0.659)
5 year	0.275**	0.200	0.305***	0.00590	0.134*
	(2.367)	(1.636)	(2.900)	(0.0590)	(1.956)

Robust z-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 11: A comparison between stock returns for companies with high and low ratios of foreign investors

Panel A: OLS regression

	G	S			E
Variable	Governance	Customer	Community	Employee	Eco
Foreign investor ratio>=mean					
3 year	0.00535	0.00498	0.0190*	0.0247***	0.0186
	(0.467)	(0.420)	(1.870)	(2.645)	(1.586)
5 year	0.0109	-0.00296	0.0187**	0.0214***	0.0178*
	(1.129)	(-0.308)	(2.156)	(2.745)	(1.735)
Foreign investor ratio<mean					
3 year	0.00627	-0.0196	0.00229	0.00653	0.0202
	(0.236)	(-0.769)	(0.115)	(0.345)	(0.544)
5 year	0.00377	-0.0191	0.00757	0.0245	0.0338
	(0.184)	(-0.894)	(0.433)	(1.494)	(1.069)

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Panel B: 2SLS regression

	G	S			E
Variable	Governance	Customer	Community	Employee	Eco
Foreign investor ratio>=mean					
3 year	0.0145	0.0181	0.0376***	0.0300***	0.0220*
	(0.733)	(1.094)	(3.016)	(2.697)	(1.677)
5 year	0.0312	0.0192	0.0354***	0.0313***	0.0252**
	(1.583)	(1.259)	(3.123)	(3.120)	(2.038)

Instrument variable: Industry avgerage CSR score

Variable	Governance	Customer	Community	Employee	Eco
Foreign investor ratio>=mean					
3 year	0.0135	0.101***	0.122***	0.0958***	0.0940***
	(0.432)	(3.895)	(3.532)	(3.269)	(3.267)
5 year	0.00701	0.0724***	0.120***	0.104***	0.0974***
	(0.244)	(3.539)	(3.971)	(4.063)	(3.830)

Instrument varianle: Size category average CSR score and Industry average CSR score

Robust z-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix

1, Variable Descriptions

Variable	Description
Score	The main CSR score was evaluated by GoodBanker, Governance, Customer, Community, Employee, and Eco. We use Asset4 score, too.
Foreign investors: Fran	Foreign investor ratio is the number of shares held by foreign investors over the total number of stocks.
Market capital size: msize	Market Size is defined as a log of the market value.
Leverage: lev	The leverage is defined as debt over the total assets.
ROA: roa	ROA is defined as EBIT over total assets.
Q ratio: q	The Q ratio is the market value of capital plus book value of debt over the book value of capital, as a measure of quality.
Dividend yield: divyld	Dividend yield.
previous return: ret112	The cumulative return over t-1 through t-12 month.
Volatility: vol	Volatility is volatility calculated from previous 12 months returns.
Volume: volm	The log of trading Japanese -yen volume.
Forecast of profitability: forecst	Forecast in profitability of financial analysts.
Year dummy: year D	Year dummy is a dummy variable of the announcement year of the CSR score.

2, CSR Score (GoodBanker) data

2.1 GoodBanker

Goodbanker is the first independent SRI/ESG special research company in Japan, established from 1999. The GB created first SRI products, called "Nikko Eco Fund," 1999 in Asia and has continued original and detailed SRI analyses. The number of analysts is 13, the number of target companies is more than 1000. They collect not only public information data but also private information by direct meeting, hearing and receiving Q&A etc. Every year more than 200 companies were visited and had meetings. Since established, they effort to continues independent agency by no-paid consultants' policy.

2.2 CSR categories and Research items

Categories		Points of screening
G	Governance	Corporate Governance system, Compliance, Management, Disclosure, Intellectual property, Managerial philosophy, Organization, Code/policy, Auditing, Protection of personal data
S	Supply and consumption Procedure (Customer)	Consumer management, Supply chain, procedure management, Developing country care, Local people care
	Social activities (Community)	Organization for social, Active program of social, educational support
	Employee	Labor association, Care for temporally employee, Affirmative-action employer, Nurseing leave program, Management of employee, Diversification of working style, Meental health care, Safety, Shorter working hours, Development of literacy, Support of career-development , Perfomance appraisal, Equal opportunity of working, Diversification, The handicapped, Employee creation
E	Environment (ECO)	ISO, Organization for environment, Director in charge, Code/policy, Co2 emission, Waste materials, Draining, Chemical substance, Care of products

3, Robustness Score (Asset4) data

3.1 CSR Screening

Categories		Points of screening
G	Governance	Best practice corporate governance principles, Equal treatment of shareholders and the use of anti-takeover devices, practices to communicate that it integrates the economic (financial), social and environmental dimensions
S	Workforce	Job satisfaction, healthy and safe workplace
	Community	Respecting the fundamental human rights conventions, Being a good citizen, protecting public health and respecting business ethics
	Product	Product Responsibility; Produce quality goods and services integrating the customer's health and safety, integrity and data privacy.
E	Environment	Management of environment-friendliness

3.2 The number of score data

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
184	365	372	381	382	390	398	398	395	400	405	4070

3, The results of logit function and ATE from PSM

	G	S			E
Variable	Governance	Customer	Community	Employee	Eco
Frgn	0.000957	-0.000195	0.0242***	0.0335***	0.0304***
	(0.318)	(-0.0656)	(6.066)	(8.089)	(8.618)
msize	1.321***	1.192***	2.012***	2.031***	1.570***
	(26.35)	(24.44)	(30.46)	(30.37)	(27.80)
q	-0.387***	-0.414***	-0.639***	-0.514***	-0.723***
	(-6.041)	(-6.542)	(-8.384)	(-6.802)	(-9.968)
lev	0.0107***	0.0111***	0.00542***	0.00328	-0.00379**
	(6.074)	(6.336)	(2.699)	(1.622)	(-2.039)
divyld	0.122***	0.125***	0.191***	0.231***	0.197***
	(3.282)	(3.432)	(4.605)	(5.509)	(5.169)
forecst	-3.39e-05	5.49e-05	0.000256	0.00124***	0.000762*
	(-0.0838)	(0.138)	(0.568)	(2.762)	(1.834)
ret112	-0.398***	-0.402***	-0.914***	-1.076***	-0.675***
	(-4.159)	(-4.292)	(-8.420)	(-9.836)	(-6.784)
vol	-12.83***	-14.52***	-8.064**	-4.804	-10.32***
	(-3.105)	(-3.546)	(-1.984)	(-1.209)	(-2.664)
lvolm	0.0452	0.0597*	0.290***	0.315***	0.220***
	(1.416)	(1.878)	(8.126)	(8.794)	(6.603)
Exchang	-0.00269	0.00100	-0.00269	0.00120	-0.00342
	(-0.279)	(0.105)	(-0.260)	(0.115)	(-0.349)
Year FE	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES
Observations	10,695	10,695	10,695	10,695	10,695
ATE	0.491	-1.958	-1.688	-3.413**	-1.666
	(0.441)	(-1.639)	(-0.947)	(-2.033)	(-1.094)

z-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4, The results of Fama-Macbeth regression

	G	S			E
Variable	Governance	Customer	Community	Employee	Eco
3 year	0.00664	-0.0269	0.0140	0.0179	0.0335**
	(0.456)	(-1.333)	(1.068)	(1.327)	(2.483)
5 year	0.00578	-0.0197	0.00951	0.0193**	0.0256***
	(0.701)	(-1.435)	(0.980)	(2.402)	(4.412)
Control	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES