Does CSR benefit firms in Japan?: Comparisons with investors' behaviors in the US and Europe

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日本における CSR と投資家行動に関する実証研究
― 欧米との比較 ―

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Abstract

Although increasing numbers of Japanese firms have started to implement CSR, and numerous studies on CSR have been conducted, there is no consensus on the raison d'etre of CSR and its impacts. Among opposing views, the situation is less clear in the Asian context. In this paper, I focus on Japanese firms and investigate whether CSR benefits firms in Japan, and how this differs from the US and Europe, by providing empirical evidence for short-run shareholder value implications. I employ the event study method using large and unique CSR dataset collected by the author to mitigate issues arising from endogeneity, especially the reverse causality problem. The present paper seeks to deepen understanding through analysis by event feature, especially in the Asian context. From the analysis, I find that for positive news, the impacts were positive before the announcement but turned negative afterward, indicating that investors' reactions were significant but temporary. As for negative news, the impacts were consistently negative before and after the announcement but diminished in 20 days. From the analysis by category, the results show Japanese investors had strong interests in "Products" and "Employee Relations" in positive news, though they were temporary. For negative news, "Products", "Community" and "Human Rights" earned strong but temporary attention from investors. Regarding the comparison with the US and Europe, I found that investors' reactions toward CSR can be categorized into US-type or Europe-type and Japanese investors seem to be US-type, rather than Europe-type. Strong negative effects after the positive news announcements illustrated that Japanese and US investors do see CSR as an opportunity for investment, or are more speculative than European investors.

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1. Background and significance of the study

In 2017, Japan Business Federation (KEIDANREN), the largest comprehensive economic organization, revised "The Charter of Corporate Behavior" to incorporate the idea of the Sustainable Development Goals (SDGs) (1) for the first time in 7 years. The Ministry of Economic, Trade and Industry of Japan (METI) established a research group for corporate social responsibility (CSR) (2) in 2004 and has been initiating the movement from the policy side. In February 2017, METI announced "Japan's CSR Policy". The total amount of socially responsible investment in Japan doubled to JPY 136.6 trillion in 2017 from previous year. In 2017, 400 firms issued integrated reports, compared to 30 firms 6 years ago (経済産業省 (METI) 2018).

Although increasing numbers of Japanese firms have started to implement CSR, and numerous studies on CSR have been conducted, there is no consensus on the raison d'etre of CSR and its impacts. Krüger (2015) illustrated controversial views on CSR from several dimensions. Firstly, he stated opposing ideas between theories and practice. Although economists like Friedman (1970) advocated that the social responsibility of business is to increase profits, companies continued to allocate significant resources to improve their relations with key stakeholders. Krüger (2015) also mentioned different conclusions in previous studies regarding the relationship between CSR and profits. Finally, he noted the role of CSR from different points of view. Some researchers like Bénabou & Tirole (2010) see CSR as "simply the manifestation of agency problem inside the firms", whereas others like Edmans (2011) identify it as where "companies engage with stakeholders for value-enhancing purposes" called "doing well by doing good". Among these opposing views, the situation is less clear in the Asian context. As Cheung & Roca (2013) highlighted, although it is where the most dynamic and successful companies are located, it is not clear how sustainability is taken into account by investors in the Asia-Pacific region. He added that no study of this type had been conducted yet, particularly in the Asia-Pacific region, and there was a need to study how investors in Asia react to sustainability issues. In this paper, I will focus on Japanese firms and investigate whether CSR benefits firms in Japan, and how this differs from the United States (US) and Europe, by providing empirical evidence for short-run shareholder value implications.

The second contribution of this paper is to implement the analysis using a large and original CSR dataset collected by the author. The data are carefully selected by the author from well-known Japanese financial newspapers based on the criteria by Kinder, Lydenberg, and Domini Research and Analytics (KLD, now part of MSCI), a data provider whose measures are widely-used in the relevant literature (e.g., Servaes & Tamayo 2013, Deng, Kang & Low 2013).

Finally, this study is innovative in its analytical method. The event study technique explicitly addresses the endogeneity problem, namely (i) measurement error and (ii) simultaneity, which are of wide concern in CSR-related research. Furthermore, though few papers have pursued the causes of CSR's impacts in detail, especially in the Asian context, the present paper seeks to deepen understanding through analysis by event feature.

The paper is organized as follows. Section 2 explains the theoretical background and hypotheses

being tested while Section 3 introduces related literature. Discussions of data and methodology are presented in Sections 4 and 5, and the empirical results are presented in Section 6. Section 7 discusses the results of the study and concludes the paper.

2．Theoretical background and hypothesis

In 1970, Friedman stated that, "the only one responsibility of business towards society is the maximization of profit" (Friedman 1970) and this was widely accepted for a long time in management and economics. On the other hand, Freeman (1984) collected various ideas on the stakeholder approach and developed an organized theory of stakeholder management, known as "Stakeholder Theory". These two ideas, Friedman's and stakeholder theory have coexisted in parallel for a while. Among the scholars, Jensen (2001) noted that because stakeholder theory was not clear on how to make the necessary tradeoffs among competing interests, it made it impossible for managers to make purposeful decisions and left them unaccountable for their actions. From this concern, he introduced "Enlightened Stakeholder Theory", which clarified the proper relation between value maximization and stakeholder theory. The theory sets long-term value maximization or value seeking as the firm's objective and therefore solves the problems that arise from the multiple objectives in traditional stakeholder theory.

Referring to the presented theories on CSR and firm value or profitability, my first hypothesis follows.

＜Hypothesis 1＞

Based on expectations of an increase in a firm's value or profitability, Japanese investors react positively to a firm's positive CSR announcements, resulting in a boost to its equity price (and vice versa for negative announcements).

I also examine the difference between investor reactions in the US and Europe, and Japan. Matten & Moon (2008) and Whitley (1999) considered that business systems in Japan, Korea and Taiwan are similar to European ones, characterized by high bank and public ownership, patriarchal and long-term employment, and coordination and control systems based on long-term partnerships rather than markets.

From this theory on the difference in firms' stakeholder relationships or CSR, I propose my second hypothesis.

＜Hypothesis 2＞

Investors' responses to CSR-related announcements in Japan are similar to those of Europe, based on their business system or their stance on stakeholder relationships.

3. Related literature

This paper contributes to several strands of research. First, it is related to the literature studying the impacts of CSR on firms' value. Whereas some researchers presented negative or neutral relationships between CSR and firms' value (e.g., McWilliams & Siegel 2000, 2001, Cheng, Hong & Shue 2013), a positive relationship was found in many other studies. Orlitzky, Schmidt & Rynes (2003), Margolis, Elfenbein & Walsh (2009) and others conducted meta-analysis of the studies examining the relationship between CSR and financial performance, and found a positive link between them. Cochran & Wood (1984) investigated the relationship between CSR and financial performance using a large dataset, logit model and industry-specific control groups. They concluded that average age of corporate assets was found to be highly correlated with social responsibility ranking. Researchers including Russo & Fouts (1997) and Flammer (2015a, 2015b, 2018) also support this idea.

This paper has an advantage over those mentioned above because it succeeds in mitigating the endogeneity problem. By using an event study, high-frequency point-in-time CSR observations enable me to precisely measure both the dates and information content of the events, and reduce both the measurement error and reverse causality problem. This research is not the first to employ the event study methodology in the CSR-related literature. A substantial number of studies using the event study adopted addition and exclusion from indexes as the event data. Some employed the Dow Jones Sustainability Index (Consolandi, Jaiswal-Dale, Poggiani & Vercelli 2009, Cheung & Roca 2013, Hawn, Chatterji & Mitchell 2018), and others chose the FTSE4Good Index (Curran & Moran 2007, Clacher & Hagendorff 2012). Edmans (2011, 2012) showed the portfolio of the "100 Best Companies to Work For in America" enjoyed significantly more positive earnings surprises and announcement returns.

These studies addressed endogeneity problems accompanied by empirical analysis of CSR by using the event study methodology and this study benefited from their contributions. They, however, still suffered from a limited number of observations. Also, they failed to break down the impacts by event feature, which I will do in this paper. Krüger's (2015) study was particularly influential on this study. He examined the shareholder value implications of positive and negative CSR events in the short-run by using an original data set collected from KLD newsletters. Godfrey, Merrill & Hansen (2009) and Flammer (2013) also used unique event datasets extracted from the Wall Street Journal. Other than news announcements, M&A announcements (Aktas, Bodt & Cousin 2011, Deng, et al. 2013) and Community Benefits Agreements (Dorobantu & Odziemkowska 2017) are also used as event data.

This paper improves on the above-mentioned studies in two ways. First, the larger dataset allows me to obtain statistically accurate results. I use 6,542 observations in my analysis, whereas Krüger (2015), Godfrey et al. (2009), and Flammer (2013) used 2,116, 178 and 273 samples, respectively. Second, this paper focuses on Asian countries represented by Japanese firms and compares the results with the US and Europe. As Cheung & Roca (2013) noted, few empirical studies have

investigated the Asia-Pacific region. They examine the impact on returns, risk and liquidity of stocks in the Asia-Pacific markets when included in and deleted from the Dow Jones Sustainability World Index using an event study. This paper will provide some insight into their findings.

4. Data and variables

This paper investigates investors' response to the announcement of CSR-related news in Japan. For this purpose, I employed Nikkei Telecom, one of the largest and most reliable business databases in Japan, to search the Nihon Keizai Shimbun (The Nikkei) for relevant news coverage. The sample period was from January 1, 2001 to December 31, 2016 (16 years). I chose this period to cover major events like the March, 2011 earthquake as well as to include the periods other studies adopted, for comparison. To identify the Nikkei articles about CSR-related issues and to categorize them by feature, I searched Nikkei Telecom using the keywords shown in Table 1. For the issue area and its criteria, I followed Kinder, Lydenberg, and Domini Research and Analytics (KLD), now part of MSCI, a data provider whose measures are widely used in the financial economics literature. In this paper, however, I excluded the corporate governance issue area to focus on firms' activities for non-shareholding stakeholders (see Krüger 2015). I then checked each article to examine if it was actually about CSR-related announcements and classified it as "positive news" or "negative news". To obtain the final data set, I excluded articles in the following categories (see Flammer 2013, Krüger 2015): (1) reporting both positive and negative news at the same time or in

Table 1 Keywords for CSR-relevant news

Issue area	Positive Key words	Negative Key words
Community	Community（地域）、Charity（寄付、基金）、Support（支援、貢献）、Volunteer（ボランティア）	Tax dispute（脱税、粉飾決算）、law suit（訴訟）・demonstration（デモ）・controversy（反発）in relation with community issue
Diversity	Diversity（ダイバーシティー）、woman（女性）、Disabled（障がい者）、Work/life benefit（ワークライフ　バランス）、Childcare（子育て）、Elder care（介護）、Gay&Lesbian（ゲイ、レズビアン）、Gender identity disorder（性同一性障害）	Fine or civil penalties（罰金）・Law suit（訴訟）・Demonstration（デモ）・Controversy（反発）in relation with diversity issue
Employee relations	Employee relations（労働環境、労働条件）、Union（組合）、No-Lay off Policy（無解雇方針）、Employee Involvement（従業員の参画）、Retirement Benefit（退職手当）、Health and Safety（従業員の健康・安全管理）	Poor Employee relations（労働環境、労働条件）、Poor Union（組合）、Poor Retirement Benefit（退職手当）、Poor Health and Safety（従業員の健康・安全管理）
Environment	Beneficial Products and Services（環境を考慮した商品・サービス）、Pollution Prevention（公害・環境汚染防止）、Recycling（リサイクル）、Clean Energy（クリーンエネルギー）、Communications（報告システム）、Property, Plant and Equipment（工場、プラント、施設の環境対策）、Management System（環境管理システム）	Fine or civil penalties（罰金）・Law suit（訴訟）・Demonstration（デモ）・Controversy（反発）in relation with Environmental issue such as Hazardous Waste（汚染廃棄物）and Regulatory Problem（環境基準違反）、Ozone Depleting Chemicals（オゾン層破壊物質）、Substantial Emissions（有害化学物質の排出）、Agricultural Chemicals（農薬の生産）・Climate Change（気候変動）、sale of oil or coal and its deliertive fuel products（石炭・石油・石油関連商品の販売又は使用）
Human rights	Positive record in South Africa（南アでの社会貢献）、Indigenous People（原住民）、Labour Right（労働者の権利）	Business or investment in Burma（ミャンマーでの営業・投資）、Concerns in Mexico（till 2002）（メキシコでの諸問題）、Indigenous People（原住民）
Product	Quality（質）、R&D/Innovation（開発研究新）、Benefits to Economically Disadvantaged（貧困層への貢献）	Fine or civil penalties（罰金）・Law suit（訴訟）・Demonstration（デモ）・Controversy（反発）for Product Safety（商品の安全性）、Marketing/Contracting（販売手法、契約）、Antitrust（独占禁止法）

the same day, (2) the firm was not publicly traded on a Japanese stock market, (3) no stock market information was available during the estimation and the event period, (4) ambiguous timestamps, (5) reporting previous events, (6) confounding contents (not clear if it is positive or negative). A possible concern related to this analysis is that the keywords might be too narrow. As Flammer (2013) explained, however, this could only reduce the power of tests due to omission of potentially relevant articles and would not lead to any statistical bias in the analysis. These criteria left me with a sample of 6,542 events: 4,212 positive and 2,330 negative events from 879 Japanese firms. Table 2 shows the distribution of events by issue area.

Table 2 The distribution of events by issue area

Event category	Positive		Negative		Total	
	Number	Proportion (%)	Number	Proportion (%)	Number	Proportion (%)
Community	209	3.19%	154	2.35%	363	5.55%
Diversity	863	13.19%	6	0.09%	869	13.28%
Employee Relations	340	5.20%	643	9.83%	983	15.03%
Environment	1,480	22.62%	37	0.57%	1,517	23.19%
Human Rights	2	0.03%	471	7.20%	473	7.23%
Products	1,318	20.15%	1,019	15.58%	2,337	35.72%
Total	4,212	64.38%	2,330	35.62%	6,542	100.00%

5. Methodology

5.1 Endogeneity problems in CSR

Measurement error and simultaneity (or reverse causality) may cause endogeneity problems in a regression model. There is no exception in the CSR context. As Krüger (2015) noted, the measurement error might arise because of 1) the difficulty in accurately quantifying CSR given the qualitative nature of many CSR-related issues, 2) the fact that no legally binding standards exist and, 3) the difficulty in observing firms' choices regarding CSR for outsiders. Many researchers, including Deng et al. (2013), Krüger (2015) and Di Giuli & Kostovetsky (2014), are concerned about the existence of simultaneity, especially reverse causality. Krüger (2015) mentioned that more responsible firms tend to be more profitable but at the same time, more profitable firms may invest more resources in CSR.

5.2 The event study

To overcome measurement error and the reverse causality problem, researchers, including Krüger (2015), Godfrey et al. (2009) and Flammer (2013), focused on outcomes of corporate behavior in the form of publicly observable events by implementing short-run event study methodology. Whereas prior research mainly relied on largely time-invariant CSR ratings, high-frequency point-in-time CSR measures enable us to precisely measure both the date and information content of the events, and credibly address the measurement error problem. Moreover, short-run

event study methodology also mitigates the reverse causality issue because the short-run stock market reaction provides a direct observation of the stock returns associated with an event, and the precise knowledge of the timing as well as the information contained in an event could exclude alternative explanations for changes in the stock returns (see Krüger 2015).

For this reason, I implement the event study, which was first introduced by Dolley (1933) and applied to economic issues by Mackinlay (1997) to mitigate statistical issues such as reverse causality. The event study is an analytical tool to assess the impact of an event on the value of a firm. It analyzes the difference between the returns that would have been expected if the analyzed event did not take place and the returns that were caused by the respective event.

To explain the technicalities of the event study, I refer to Mackinlay (1997) and Krüger (2015). Appraisal of the event's impact starts from identifying the period that the stock prices are affected by the event. This period is called the Event Window. As illustrated below, 0 is the day that the event occurs. The Pre-event/Estimation Window, from $t=T_0$ to $t=T_1$ is a certain period before the event and this is used to estimate firms' normal return. The Event Window, from $t=T_1+1$ to $t=T_2$ including the date of the event is the period affected by the events and the cumulative abnormal return (CAR) of this period usually becomes a target of interest. Following McKinlay (1997) and others, I include the periods prior to the event to observe investors' anticipation mainly caused by information leakage. The Post Event Window from $t=T_2+1$ to $t=T_3$ is the period after the event and the CAR of this period may also be of interest. In my study, I use 250 trading days ending 50 days before the event date as the Pre-Event Window and analyze the statistical properties of the 11-day[−10, 0], 6-day[−5, 0], 2-day[−1, 0], 3-day[−1, 1], 11-day[−5, 5], 21-day[−10, 10], 6-day[0, 5] and 21-day[0, 20] CARs around the event date.
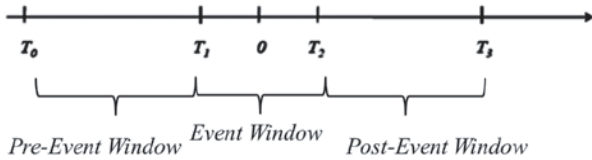

Fig.1 Event Window
Source: Illustrated by the author

The event study requires the rate of return of the stock price and the index, calculated as follows:

$$r_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}}, \qquad r_{mt} = \frac{T_t - T_{t-1}}{T_{t-1}} \quad \cdots (1)$$

where P_{it} represents the stock price of the ith firm at time t, r_{it} is its rate of return, T_t refers to TOPIX at time t, and r_{mt} is its rate of return.

To investigate the effect of an event, we must evaluate the abnormal returns of a firm. Abnormal returns are the difference between the real rate of return and the normal return (the expected

return if an event does not occur). To calculate the normal return, I employ the following market model consistent with Mackinlay (1997), Krüger (2015) and other relevant studies:

$$r_{i,t} = \alpha_i + \beta_i r_{m,t} + v_{i,t}, \quad \cdots (2)$$

where $E[v_{i,t}]=0$ and $Var[v_{i,t}]=\sigma_{vi}^2$. α_i and β_i are unknown parameters to be estimated by OLS and used to calculate the normal return. The abnormal returns ($AR_{i,t}$) are calculated by deducting the estimated returns from the real returns.

$$AR_{i,t} = r_{i,t} - (\widehat{\alpha}_i + \widehat{\beta}_i r_{m,t}) \quad \cdots (3)$$

After summing the abnormal returns of firm i in period t, the cumulative abnormal returns are calculated as follows:

$$CAR_i(t_i, t_2) = \sum_{t=t_1}^{t_2} AR_{i,t} \quad \cdots (4)$$

To test the null hypothesis that the event does not affect the stock returns and to examine the significance of the results, I adopt Boehmer, Musumeci & Poulsen's (1991) t-test (hereafter referred to as BMP-test), which is adjusted to allow event-induced variance. The BMP-test is widely accepted in relevant studies like Cheung (2011), Cheung and Roca (2013) and Krüger (2015) as a more robust test.

6. Results
6.1 Overall events

To examine if CSR is in the best interest of investors, I examine the impact of the CSR announcement. Referring to Aktas et al. (2011), Cheung (2011), Lackmann Ernstberger & Stich (2012), Flammer (2013) , Krüger (2015) and Hawn et al. (2018), I analyze the statistical properties of CARs in 8 windows, [−10, 0], [−5, 0], [−1, 0], [−1, 1], [−5, 5], [−10, 10], [0, 5] and [0, 20], around the event date to see both pre- and post-impacts of the news announcements.

Table 3 displays the results for events from 2001 to 2016. It reports the CAR means and their BMP t-statistics for all events. For positive news, the result shows that the impacts are positive and significant before the announcement, namely the [−10, 0], [−5, 0] and [−1, 0] windows. Afterward, however, the impact turns negative and significant in the [0, −20] window. The result indicates that CARs of listed firms are larger than the market index (TOPIX) for the [−10, 0], [−5, 0] and [−1, 0] windows, respectively, and less than TOPIX for the [0, 20] window. As for negative announcements, the impacts are negative and significant consistently from 10 days before the announcement to 5 days after the announcement, namely for all windows excluding [0, 20]. It indicates that CARs of listed firms are less than the market index for those windows.

Table 3 CARs for overall events

	Windows	Mean	t_{bmp}	observations
Positive	$(-10, 0)$	0.149 ***	2.772	4,212
	$(-5, 0)$	0.0892 **	2.195	4,212
	$(-1, 0)$	0.0598 **	2.409	4,212
	$(-1, 1)$	0.0268	0.909	4,212
	$(-5, 5)$	0.0325	0.589	4,212
	$(-10, 10)$	0.0156	0.2	4,212
	$(0, 5)$	-0.0112	-0.269	4,212
	$(0, 20)$	-0.286 ***	-3.859	4,212
Negative	$(-10, 0)$	-0.270 ***	-2.824	2,330
	$(-5, 0)$	-0.270 ***	-3.646	2,330
	$(-1, 0)$	-0.215 ***	-4.66	2,330
	$(-1, 1)$	-0.330 ***	-5.763	2,330
	$(-5, 5)$	-0.288 ***	-2.837	2,330
	$(-10, 10)$	-0.235 *	-1.71	2,330
	$(0, 5)$	-0.125 *	-1.686	2,330
	$(0, 20)$	0.0328	0.259	2,330

Note: Asterisks (*) show statistical significances of the means of CARs by t-test where *p < 0.10, **p < 0.05, ***p < 0.01.

6.2 By event category

To investigate if investors are interested in any particular event category, I sort events by their features — 1) Community, (2) Diversity, (3) Employee Relations, (4) Environment, (5) Human Rights and (6) Product, by using KLD or Krüger's (2015) classification. The results are shown in Table 4 for both positive and negative news.

Table 4 CARs by News Category

Positive news	Windows	$[-10, 0]$	$[-5, 0]$	$[-1, 0]$	$[-1, 1]$	$[-5, 5]$	$[-10, 10]$	$[0, 5]$	$[0, 20]$	observations
Community	mean	0.125	0.0893	0.0469	-0.0175	0.24	0.528	0.122	-0.156	209
	t_{bmp}	0.479	0.493	0.42	-0.146	0.964	1.53	0.747	-0.514	
Diversity	mean	0.112	0.0625	0.0351	0.012	0.00937	-0.431	-0.0616	-0.404 **	863
	t_{bmp}	0.966	0.714	0.683	0.206	0.0836	-0.26	-0.706	-2.572	
Employee relations	mean	0.118	0.226	0.134 *	0.133	0.15	-0.374	0.0377	-0.586 **	340
	t_{bmp}	0.594	1.446	1.782	1.218	0.764	-1.34	0.266	-2.263	
Environment	mean	0.0297	-0.0315	0.0266	-0.046	-0.102	-0.014	-0.0615	-0.177	1,480
	t_{bmp}	0.33	-0.472	0.617	-0.885	-1.057	-0.11	-0.815	-1.406	
Human right	mean	0.197	1.173	1.23	2.002	3.95	4.091	4.671	3.311	2
	t_{bmp}	0.125	1.197	4.013	4.631	1.041	1.6	1.099	1.134	
Products	mean	0.319 ***	0.205 ***	0.0944 **	0.0948 *	0.13	0.101	0.0373	-0.280 **	1,318
	t_{bmp}	3.317	2.775	2.049	1.776	1.306	0.74	0.513	-2.042	

Negative news	Windows	$[-10, 0]$	$[-5, 0]$	$[-1, 0]$	$[-1, 1]$	$[-5, 5]$	$[-10, 10]$	$[0, 5]$	$[0, 20]$	observations
Community	mean	-0.136	-0.291	-0.365 ***	-0.400 **	-0.157	-0.1	-0.0771	-0.285	154
	t_{bmp}	(-0.483)	(-1.252)	(-2.919)	(-2.407)	(-0.443)	-0.22	(-0.377)	(-0.788)	
Diversity	mean	0.721	0.426	-0.258	-0.49	0.445	0.285	0.122	-1.217	6
	t_{bmp}	-0.781	-0.719	(-0.796)	(-0.816)	-0.446	0.22	-0.0962	(-0.561)	
Employee relations	mean	0.288	0.218	0.0404	-0.1	0.128	0.298	-0.112	0.347	643
	t_{bmp}	-1.398	-1.388	-0.386	(-0.805)	-0.595	0.93	(-0.721)	-1.177	
Environment	mean	-0.438	-0.127	-0.243	-0.146	-0.0318	-0.099	0.23	0.123	37
	t_{bmp}	(-0.849)	(-0.322)	(-1.209)	(-0.493)	(-0.0551)	-0.15	-0.489	-0.153	
Human right	mean	-0.0958	-0.0822	-0.0907	-0.186 **	-0.018	0.147	0.12	0.334	471
	t_{bmp}	(-0.580)	(-0.725)	(-1.315)	(-2.100)	(-0.107)	0.61	-0.936	-1.324	
Products	mean	-0.723 ***	-0.670 ***	-0.410 ***	-0.537 ***	-0.709 ***	-0.776 ***	-0.268 **	-0.253	1,019
	t_{bmp}	(-4.807)	(-5.590)	(-5.642)	(-5.830)	(-4.407)	-3.93	(-2.237)	(-1.425)	

Note: Asterisks (*) show statistical significances of the means of CARs by t-test where *p < 0.10, **p < 0.05, ***p < 0.01.

As seen in Table 4, "Products" and "Employee Relations" generate significant and positive CARs from 10 days before the announcement to 1 day after the announcement, and from 1 day before the announcement until the very announcement day, respectively. On the other hand, in the [0, −20] window, means of CARs are negative and significant for "Diversity", "Employee Relations", and "Products". For negative news, "Products", "Community" and "Human Rights" present negative and significant results, from 10 days before the announcement to 5 days after the announcement for "Products", in the [−1, 0] and [−1, 1] windows for "Community", and in the [−1, 1] window for "Human Rights". There is no significant adverse result for negative news.

6.3 Comparison to the US and Europe

Another research question asks how investors' reaction to CSR in Japan differs from that in the US and Europe. To investigate the difference, I compare the statistical results of CARs.

Cheung (2011) examined the impact of index on firm value by analyzing 177 samples of US stocks that were added to or deleted from the Dow Jones Sustainability Index during 2002-2008. He employed 2 sets of event days, the announcement day (AD) and the day of change (CD). Table 5 shows the mean CARs and their statistical test results. As the table shows, Cheung found no significant result for t-test but significant positive abnormal returns in window [AD−2, AD+2] for sign-test which indicated an anticipation effect 2 days before the announcement day. On the day of change (CD), however, the impact became negative and significant. He concluded that the impacts were largely temporary and could not last long for index inclusion. For index exclusions, CARs are

Table 5 Cumulative Abnormal Return in Smaller event Window by Cheung (2011)

Type		Panel A : index inclusions				Panel B : index exclusions			
Specific event window	Event days	CAR (%)	Percentage positive CAR	Sign-test stastistic	t−test	CAR (%)	Percentage positive CAR	Sign-test stastistic	t−test
Pre-AD	AD−10, AD−1	0.835	56	1.118	0.983	0.025	43	−1.320	0.040
AD	AD	−0.132	44	−1.118	−0.630	−0.134	51	0.209	−0.750
	AD−1, AD+1	−0.196	58	1.342	−0.571	−0.004	48	−0.305	−0.014
	AD−2, AD+2	0.289	63	2.236**	0.618	0.087	48	−0.305	0.222
	AD−3, AD+3	0.566	59	1.565	1.048	−0.153	44	−1.117	−0.344
		0.834	58	1.342	1.408	−0.111	46	−0.711	−0.229
Run-up	AD+1, CD−1	−0.540	46	−0.671	−0.813	−0.939	40	−1.877*	−1.274
CD	CD	−0.194	40	−1.789*	−1.221	0.081	49	−0.209	0.381
	CD−1, CD+1	0.094	50	0.000	0.290	−0.890	46	−0.711	−2.091**
	CD−2, CD+2	−0.133	49	−0.224	−0.307	−0.887	47	−0.508	−1.641
	CD−3, CD+3	0.124	56	1.118	0.279	−1.291	42	−1.523	−1.917*
Release	CD, CD+4	0.332	58	1.342	0.879	−0.406	51	0.209	−0.934
Post-release	CD+5, CD+5	0.050	53	0.447	0.269	−0.130	47	−0.626	−0.633
	CD+5, CD+10	−0.890	46	−0.671	−1.272	−0.907	43	−1.251	−1.257
Temporary	AD, CD+10	−1.215	54	0.671	−0.978	−2.035	43	−1.251	−1.582
price	AD−15, CD+10	−0.641	46	−0.671	−0.386	−1.844	44	−1.117	−1.341
Permanent	AD, CD+30	−1.311	51	0.224	−0.727	−2.083	47	−0.626	−1.123
price	AD−15, CD+60	0.497	54	0.671	0.265	−1.133	49	−0.102	−0.522

Source: Cheung (2011)

negative and significant in the run-up period [AD + 1, CD − 1] for t-test and periods around CD, being [CD − 1, CD + 1] and [CD − 3, CD + 3] for sign-test, suggesting that the selling pressure is high in this period. After the change, however, the impact is statistically insignificant. Cheung's (2011) results are partially similar to my results discussed in 6.1. Both in Japan and the US, investors respond positively to the CSR-related positive announcement beforehand but show adverse reaction after the announcement. For negative news, investors in both the US and Japan value the firm stock negatively before and after the announcement. The impact in Japan, however, seems to last longer than in the US.

Consolandi et al. (2009) performed an event study on 208 European corporations with the highest CSR scores among those included in the Dow Jones Stoxx 600 Index to analyze whether the stock market evaluation reacted to the inclusion (deletion) in the Dow Jones Sustainability Stoxx Index (DJSSI) during 2002–2006. They took into account both the announcement date (AD) and the date on which the index is effectively changed (ED) as the event dates. Table 6 shows the average CARs and their statistical test results. In the case of inclusion, the authors found positive and significant CARs that started before the announcement (window [AD − 10, AD − 1]), culminated around the day of the effective inclusion (window [AD + 1, ED − 1]) and then tended to diminish. In the case of deletion, the CARs started to diminish shortly after the announcement until the actual inclusion (window [AD + 1, ED − 1]) and continued to decrease until 10 days after the effective deletion day (window[ED + 1, ED + 10]).Comparing their results to mine in 6.1, for positive news, we both find positive and significant effects for the pre-announcement period. They, however, did not find any adverse effect after the announcement or effective date like Japanese firms. As for negative news, both studies find negative and significant effects before and after the announcement.

Interpreting the difference between the US, Europe and Japan from the analysis above, I categorize the US-type, Europe-type and Japanese investors shown in Table 7 and make 3 findings: 1) the difference in investors' responses to CSR can be explained in terms of US-type versus Europe-type, 2) Japanese investors' behaviors are more like those in the US, not Europe, 3) presuming from strong negative effects after the announcement for positive news, Japanese and US investors tend to

Table 6 Cumulative average abnormal return for companies included and deleted from the DJSI Stoxx over the period 2002–2006 (single event windows) by Consolandi et al. (2009)

Event window	Add		Del	
	CAAR Ti：Tn （%）	$t-$test	CAAR Ti：Tn （%）	$t-$test
AD − 10：AD − 1	0.04	4.35**	0.010	0.84
AD	− 0.006	− 0.89	0.001	0.13
AD + 1：ED − 1	0.030	2.59**	− 0.050	− 3.83**
ED	− 0.008	− 0.94	− 0.003	− 0.28
ED + 1：ED + 10	0.001	0.16	− 0.030	− 4.48**

**Significant at a level of 95%
Source: Consolandi et al. (2009)
Note: Stars for deleted companies were added by the author because they were missing in the original paper.

lock in profit even for CSR-induced investment. That means Japanese and US investors take CSR as a profit-making opportunity, or are more speculative than European investors.

Table 7 Investor-type categorization

Investor-type		Positive news	Negative news
Japan	Before the event	Positive	Negative
	After the event	Negative	Negative
The US	Before the event	Positive	Negative
	After the event	Negative	Negative
Europe	Before the event	Positive	Negative
	After the event	Positive	Negative

7. Discussion and conclusion

In this paper, I studied the investor value implications of CSR-related announcements in Japan and the difference from the US and Europe by examining CARs around the announcement through the event study method. I employed the event study method to mitigate issues arising from endogeneity, especially the reverse causality problem. Based on the theories presented in previous papers, I developed two hypotheses.

For the first hypothesis, I examined the impact of the CSR announcement by analyzing the statistical properties of CARs around the event date for overall categories and by event categories. From the analysis for overall categories in 2011-2016, I found that for positive news, the impacts were positive before the announcement but turned negative afterward, indicating that investors' reactions were significant but temporary. As for negative news, the impacts were consistently negative before and after the announcement but diminished in 20 days. These results can be explained by the price pressure hypothesis introduced by Harris & Gurel (1986), which posited that the increase (decrease) in demand and price responding to an event announcement was temporary because the announcement did not carry information. Significant impacts before the event also indicate the existence of information leakage to substantial part of investors. To see if the impact differed by event feature, I conducted the analysis by category. The results show Japanese investors had strong interests in "Products" and "Employee Relations" in positive news, though they were temporary. For negative news, "Products", "Community" and "Human Rights" earned strong attention from investors.

Regarding the second hypothesis, I found that investors' reactions toward CSR can be categorized into US-type or Europe-type, and, different from what I expected, Japanese investors seem to be US-type, rather than Europe-type. Strong negative effects after the positive news announcements illustrated that Japanese and US investors do see CSR as an opportunity for investment, or are more speculative than Europe investors.

I close this article with suggestions for further investigations in the future. In this paper, I have

not conducted risk analysis and robustness checks for stronger results. To enable more accurate comparisons with other studies, future researchers could adopt widely used event data such as the Dow Jones Sustainability Index (DJSI). In addition, long term analysis using OLS would enhance the results. Comparison with countries other than the US and Europe, and consumer side analysis are also open for future study.

Notes

[1] Defined as "a firm's activity to make positive impact to the society and stakeholders, such as community, employee and consumers, beyond its shareholders" in this paper.

[2] The practice of investing in companies whose business is not harmful to society or the environment. (Definition from Cambridge Business English Dictionary.)

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