CSR Activity, Visibility, and Firm Value in the Long Term: Evidence from Japan

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Abstract: This paper examines comprehensive and foundational insight into the long-term relationship between a firm's corporate social responsibility (CSR)-related announcements, CSR visibility, and firm value in Japan. I employed an OLS regression analysis of Tobin's q as a proxy of firm value with the original news dataset I collected from newspapers for CSR-related news announcements and CSR visibility. The regression results suggest, firstly, the positive relationship between a positive news announcement and firm value in the long-term, whereas the impact was found to be explained by CSR visibility in the longer-term. Secondly, the study showed that annual CSR visibility has a positive impact on the firm's value, which supports the idea that firms can attract more long-term investors, financial capital, and political supports by strengthening CSR visibility. Managers and public relations officers may want to be aware that both a positive CSR-related news announcement and CSR visibility have a positive impact on firm value basically, whereas the impact is gradually occupied by CSR visibility, not the announcement. Accordingly, managers are also advised to emphasize not only on "what they do" but also "how to show" their CSR activities in their long-term strategy.

Keywords: corporate social responsibility (CSR), visibility, firm value, long-term analysis, legitimacy, Japan

Over the past decades, there has been a rapid growth of the Corporate Social Responsibility (CSR) concept by firms across the globe. In Japan, CSR is also getting more interest in both business and government sectors during the past 10 years; whereas the private sector holds pride in initiating the CSR implementation. In 2017, the 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) for the first time in seven years. According to the Global Sustainable Investment Alliance (2018), sustainable investment assets in 2018 have increased four times compared to that of 2016. This asset's growth leads Japan to "third-largest center" for sustainable investment after Europe and the United States.

From a practical point of view, variations in CSR activities and visibility among firms must be explored. Large firms that are more focused on CSR devote substantial resources to improve the impact of their CSR activities while maximizing their opportunity of being included in high profile sustainability indices expense (Ernst & Young, 2014; O'Dwyer et al., 2011).

For example, these firms establish their information systems, release CSR reports, and hire CSR auditors to assure credibility and provide sustainable audit reports. Over time, it has been argued that small firms having lower visibility due to their smaller-scale operations are less likely to be part of the CSR initiatives. This situation can also be explained by the theoretical concepts that CSR activities create a form of goodwill or moral capital for the firm (Gardberg & Fombrun, 2006; Godfrey et al., 2009). Attracting the public's attention is, of course, one of the major objectives of CSR engagement by firms. Firms participate in CSR practices to enhance their visibility, while at the same time get more attention and good reputation due to improved highlighting characteristics. In this way, they can easily and positively differentiate themselves from their competitors (Mackey et al., 2007; Udayasankar, 2008). These firms, as they make prosocial claims and develop a positive reputation, become more visible. They are also exposed in the spotlight as they proclaim their dedication to prosocial values, drawing the attention of their investors and consumers to their social consciousness. This leads to a research question of "if" and "how" CSR activities and firm visibility positively impact firm value for longer periods. Although a growing body of researches theorize or conceptualize the relationship between CSR performance and firm-value (Abe et al., 2017; Bénabou & Tirole, 2010) as well as CSR visibility and firm-value (Amel-Zadeh & Serafeim, 2018; Bansal & DesJardine, 2014; Flammer & Bansal, 2017; Servaes & Tamayo, 2013), little or mixed results have empirically examined to show if and how to affect a firm's economic growth for longer periods (Mutuc & Lee, 2019), especially in Japan. This paper helps to fill this gap by conducting regression analysis using the original dataset for CSR news announcements and CSR visibility with Tobin's q as a proxy of long-term firm value.

This paper will focus on Japanese firms and investigate the relationship between CSR visibility and firms' value in Japan by providing empirical evidence for long-term implications. The second main contribution of this paper is to implement the analysis using a large and original CSR dataset I collected. I carefully selected the data 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 supplier whose measures are authentic to be used in the relevant literature (e.g., Ambec & Lanoie, 2008; Deng et al., 2013; Servaes & Tamayo, 2013).

The paper is organized as follows: Section 2 provides the theoretical background. Sections 3, 4, and 5 present the data and variables, methodology, and empirical results, respectively. Section 6 discusses the conclusion, practical implication, and future work.

Theoretical Background and Literature Review

How CSR Activity Affects a Firm's Value

Friedman's (1970) theory of firms and Freeman's (1984) stakeholder theory have coexisted in parallel for a while. Jensen (2001) noted that because the stakeholder theory was not clear on how to make the necessary trade-offs among competing interests, it was impossible for managers to make purposeful decisions, leaving them unaccountable for their actions. From this concern, Jensen (2001) enlightened stakeholder theory, which clarified the proper relation between value maximization and stakeholder theory. This theory sets the basics of long-term value maximization or value seeking as the firm's objective, which resolves the issues that arise from the multiple objectives of traditional stakeholder theory. Carroll and Shabana (2010) insisted that "CSR activities that are not rewarded by the market are those activities that individuals do not value and are therefore unwilling to support. The merit of CSR activities, thus, should be determined by the free market mechanism" (p. 91).

So, how does CSR affect a firm's value in the long term? Though the theoretical literature on the mechanism upon which CSR generates value for a firm is still developing, researchers such as Abe et al. (2017), Freeman (2010) and Waddock and Graves (1997) offer systematic analyses on the channels of potential revenue increase or cost reduction from four dimensions: (1) the employee side, (2) the consumer side, (3) the technical side, and (4) corporate governance.

One view is that CSR has the power to attract potential employees that lead to both cost reduction and revenue generation (Greening & Turban, 2000), which enhance firm value. Moreover, CSR also uplifts employees' morale, thus increases their outputs (Abe et al., 2017; Fisman et al., 2006so that a firm must signal its aversion to sacrificing quality (i.e., generate trust

with the consumer; Flammer & Luo, 2017; Freeman, 1984; Waddock & Graves, 1997). Edmans (2011, and 2.1% above industry benchmarks. The results are robust to controls for firm characteristics, different weighting methodologies, and the removal of outliers. The Best Companies also exhibited significantly more positive earnings surprises and announcement returns. These findings have three main implications. First, consistent with human capital-centered theories of the firm, employee satisfaction is positively correlated with shareholder returns and need not represent managerial slack. Second, the stock market does not fully value intangibles, even when independently verified by a highly public survey on large firms. Third, certain socially responsible investing (SRI2012) reported that firms with high employee satisfaction tend to outperform the market.

In another view, the findings of Bénabou and Tirole (2010) referred to the concept that socially responsible firms turn to a channel for expressing personal values on behalf of their stakeholders; in other words, a delegated philanthropy. In addition, more socially conscious consumers tend to be more attracted (Ambec & Lanoie, 2008; Albuquerque et al., 2019; Besley & Ghatak, 2007; Dimson et al., 2015; Puriwat & Tripopsakul, 2018), which could positively affect a firm's value. Schuler and Cording (2006) investigated whether the information and moral values are key elements in this process for consumers, and concluded that consumers' moral values have a significant influence on their purchasing behavior. In addition to the above-stated impacts, CSR may also promote and ease access to previously closed markets like nonprofit organizations (Abe et al., 2017; Fisman et al., 2006so that a firm must signal its aversion to sacrificing quality (i.e., generate trust with the consumer; Freeman, 2010; Kanter, 1999; Waddock & Graves, 1997).

The third dimension of CSR is from the technical side. Jones (1995) forwarded the view that CSR may lead to the development of more efficient technologies that allow firms to reduce costs. CSR can also increase product differentiation that makes it more valuable and ranks to premium pricing (Albuquerque et al., 2013; Ambec & Lanoie, 2008; Besley & Ghatak, 2007; Guenster et al., 2011).

Finally, how does CSR benefit firms from a corporate governance side? Bénabou and Tirole (2010) supported evidence that CSR practices allow management to have a long-term perspective to maximize intertemporal profits, which are in line with the interests of universal owners. Tirole (2001) also demonstrated that the implementation of the stakeholder society could mitigate "dearth of pledgeable income," "deadlocks in decision-making," and "lack of clear mission for management" by using economic analysis of the concept of shareholder value. Magill et al. (2013) analyzed various economic models of competitive equilibria and Pareto optimal and found that if managers maximize total value, such as consumer and employee surpluses, efficiency can sometimes be increased. Ramchander et al. (2012) employed the resource-based view (RBV) theory to explain CSR's impact on firm value. RBV theory asserts that resources and organizational capabilities of the firm lead to better financial performance only if these resources are valuable, rare, imperfectly imitable, and non-substitutable (Barney, 1991; Hart, 1995; Litz, 1996; Wernerfelt, 1984). In the CSR context, Ramchander et al. (2012) stated that managing relationships with primary stakeholders involves an element of knowledge or learning competency that is a unique element to the firm and, therefore, not easily replicable by its competitors (Branco & Rodrigues, 2006; Hart, 1995; Litz, 1996; McWilliams et al., 2002). Being a socially responsible firm can also cut costs by reducing opportunism in the firm, risks in management and relations with external stakeholders, and facilitating finance such as bank loans (Ambec & Lanoie, 2008; Barnett & Salomon, 2012; Bauer & Hann, 2010; Cheng et al., 2014; Dhaliwal et al., 2011; El Ghoul et al., 2011; Hong et al., 2012; Jones,1995). As for corporate governance, announcements themselves do not make an impact beforehand but is a result of the firm's effort.

It has been argued that CSR activities provide benefits to firms through their effects on employees, consumers, technology, and corporate governance. Consequently, CSR activities could raise the firm value. Therefore, based on the reasons above, I hypothesize that:

H1: Positive CSR-related activities provide positive impacts on firm value in the long-term.

CSR Visibility and Firm's Value

Several researchers have argued that when a firm commits to CSR, they become obligated to

uphold values and ethics that stakeholders consider important (Joyner & Payne, 2002; Brammer et al., 2007). One aspect of CSR is value creation activities. Contextually, value creation activities make a progressive way for firms to improve their credentials to both society and the firm. In making this achievable, it is important to align the interests of both society and the company. This systematic alignment will result in the creation of values for both society and the firm. As Wu et al.(2018) stated, public visibility shows how stakeholders perceive corporate activities and provides a prerequisite for stakeholders to react to corporate behaviors. According to Pollock & Gulati (2007), Pollock et al. (2008) and Wu et al. (2018), latest research reveals that public visibility is basically associated with supportive reactions by stakeholders, including positive assessments from both community and regulatory stakeholders. Prior studies has also reported the backup function of public visibility in corporate performance (Servaes & Tamayo, 2013; Wu et al., 2018). There is a need for deep understanding mainly for managers to recognize and appreciate the similarity and differences of CSR from traditional corporate culture to pursue value creation through CSR.

However, a series of firm-level attributes will probably affect CSR participation by firms. How long are they able to maintain value for their firm through CSR? Understanding these attributes is essential, as firms make attempts to deriving strategic value from CSR. Over time, long-term investors may view firms that are visibly recognized as strong CSR performers as more suitable for their investment strategy because these firms seem a better match for their investment time horizon relative to CSR-equivalent firms that did not pass this stringent selection process (Amel-Zadeh & Serafeim, 2018; Bansal & DesJardine, 2014; Flammer & Bansal, 2017). Furthermore, there is a possibility that the greater the visibility of firms, the more the regulatory stakeholders become knowledgeable about the legitimacy of firms. Therefore, having a higher visibility level can better build, maintain, or promote relationships with several stakeholders in a way that it becomes easier for such firms to access financial capital and political supports. Through this, firms can engage in more innovative activities to create new products, new processes, and new ways of operating

that eventually birth outputs of value for their firms. Particularly, the study of Servaes and Tamayo (2013) investigated the relationship between CSR and firm value and reported that this value is stronger for firms with high customer awareness. Durand et al. (2019) also found a positive relationship between firms' CSR visibility and the number of analysts following a firm as well as equity prices. Wu et al. (2018) also observed a linear trend that public visibility and firm transparence accelerated the positive relationship between green CSR and innovation performance. Krüger's (2015) study was particularly influential in this study. He examined the shareholder value implications of positive and negative CSR events in the short term by using an original dataset collected from KLD newsletters. Godfrey et al. (2009) and Flammer (2013) also used unique event datasets extracted from the Wall Street Journal. Other than news announcements, mergers, and acquisitions announcements (Aktas et al., 2011; Deng et al., 2013) and community benefits agreements (Dorobantu & Odziemkowska, 2017) are also used as event data, although their results are mixed. Based on the theoretical arguments and empirical results, it can be concluded that firms' CSR visibility offers them positive value in the long term, as well as the relationship between a firm's CSR activity and the firm's value. Hence, the second hypothesis is formulated as follows:

> H2: The visibility of a firm's CSR performance positively affects firm value in the long term.

Methods

Samples

This study aims to examine the long-term relationship between a firm's value, the firm's CSR performance, and its visibility in Japan. For this purpose, I designed my research sample by using information from two databases, Nikkei Telecom and Thomson Reuters DataStream. To measure CSR performance and its visibility, 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). 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 which follows Murashima (2020) first, the different reactions toward CSR-related news announcements among shareholders. Second, the findings indicate that individual investors are more sensitive to CSR-related positive news, whereas institutional investors are more concerned about the negative news, providing one of the reasons for mixed results in the studies on the CSR and financial performance linkage. Those findings indicate that CSR-related news affects investors' behaviors differently based on their purpose, ability and accessible information. For the issue area, following Krüger (2015), Flammer (2013), and Godfrey et al. (2009), who employed KLD newsletter or its rating as CSR performance, I followed Kinder, Lydenberg, and Domini Research and Analytics (2010), now part of MSCI, for the news selection criteria and clarification of "positive" and "negative" news. KLD is a data provider whose measures are widely used in the financial economics literature. Instead of KLD news, I chose the Nikkei because it is more familiar to Japanese investors than KLD news, which is more suitable to observe the market valuation of CSR-related events. In this analysis, however, the issue of corporate governance to focus on firms' activities for non-shareholding stakeholders was excluded (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." For accuracy, I also excluded articles in the following categories (see Flammer, 2013; Krüger, 2015): (a) reporting both positive and negative news at the same time or in the same day, (b) firm not publicly traded on a Japanese stock market, (c) no stock market information was available during the estimation and the event period, (d) ambiguous timestamps, (e) reporting previous events, (f) confounding contents (not clear if it is positive or negative), (g) reporting with financial news, and (h) duplicating with other news in the target window. Although following KLD's criteria, which Krüger (2015), Flammer (2013) and Godfrey et al. (2009) and many other researchers employed, 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 the omission of potentially relevant articles and would not lead to any statistical bias in the analysis.

In addition, I collected stock price data and accounting data from Thomson Reuters DataStream, the historical financial database that contains both I/B/E/S and World Scope database offered by Thomson Reuters. After considering the one-year lag in my key independent variables (the announcements of CSR-related news), the final sample included 5,106 observations for 879 unique firms during the period of 2001 to 2016 in Japan.

Dependent Variable

Tobin's q, the market value of a company divided by its assets' replacement cost, tells whether a firm is overvalued or undervalued, and is a dependent variable in this analysis. Tobin's q of the target firms in each year was obtained from Thomson Reuters DataStream, which is calculated as follows:

Tobin's q_{it} = (Market capitalization at fiscal year-end date$_{it}$ + Preferred stock$_{it}$ + Minority interest$_{it}$ + Total debt minus Cash$_{it}$)/Total asset$_{it}$

Tobin's q has been applied widely in economics and finance studies as a performance measure (see, for example, Hawn & Ioannou, 2016; Servaes & Tamayo, 2013; Waddock & Graves, 1997). According to Servaes and Tamayo (2013), the advantage of using Tobin's q over profitability is that profitability is a short-term measure, whereas Tobin's q is a long-term measure that is based on the market value of the firm. On the other hand, although this study refers to the original formula of Tobin's q, Bartlett and Partnoy (2018) pointed out that Tobin's q, especially the simplistic version of Tobin's q, would cause estimation bias because of measurement error if it is used as an indication for firm value. As Bartlett and Partnoy (2018) suggested, the proxy of firm value could be the sum of the market values of equity and debt. The accuracy of the indicator, therefore, should be redetermined in the future study. To test the robustness of the result, I also implement regressions using profitability indicators, such as return on asset, return on equity, return on sales, and sales growth, as dependent variables.

Independent Variables

As presented previously, one of the key independent variables of this thesis is the firm's CSR activity, which is proxied by the feature of positive CSR-related news (*Posi*). In addition, I adopted a variable measuring

Table 1

Keywords for CSR-Relevant News

Issue area	Positive Keywords	Negative Keywords
Community	Community, Charity, support, Volunteer	Tax dispute, law suit / demonstration / controversy in relation with community issue
Diversity	Diversity, Woman , Disabled,Work/life benefit, Childcare, Elder care, LGBT, Gender identity disorder	Fine or civil penalties / law suit / demonstration / controversy in relation with diversity issue
Employee relations	Employee relations, Union, No-lay-off policy, Employee involvement, Retirement benefit, Health and safety	Poor employee relations, Poor union, Poor retirement benefit, Poor health and safety
Environment	Beneficial products and services, Pollution prevention, Recycling, Clean energy, Communications, Property / Plant and equipment, Management system	Fine or civil penalties / law suit / demonstration / controversy in relation with environment issues, Hazardous waste, Regulatory problem Ozone depleting chemicals, Substantial emissions, Agricultural chemicals, Climate change, Sale of oil or coal and its derivative fuel products
Human rights	Positive record in South Africa, Indigenous people, Labor right	Business or investment in Burma, Concerns in Mexico (till 2002), Indigenous people
Product	Quality, R&D / Innovation, Benefits to economically disadvantaged	Fine or civil penalties / law suit / demonstration / controversy for Product safety , Marketing/ Contracting, Antitrust

Source: Adapted from Kinder, Lydenberg, and Domini Research and Analytics (2010), Murashima (2020)

the impact of annual CSR visibility of each firm on its financial performance. I used a unique dataset collected from newspapers and created a new index (*CSR*). Following Gillan et al. (2010), Servaes and Tamayo (2013), Cheung and Roca (2013), Hubbard et al. (2017, and other papers, I deducted the number of negative news (*Num_Negative*) from the number of positive news (*Num_Positive*) by year for each firm to capture the whole CSR-related visibility of each firm (*i*) in each year (*t*). As shown in Table 2, the visibility index and MSCI ESG ratings, the successor of KLD ESG ratings, seem to have some positive relationship. Although visibility does not always represent the rating of a firm, this indicates that the index tells a firm's CSR performance well. The calculation is shown in the equation below.

$$CSR_{it} = Num\_Positive_{it} - Num\_Negative_{it}$$

Control Variables

The model included some control variables that may affect firms' performance. Consistent with the literature (Hawn & Ioannou, 2016; McWilliams & Siegel, 2000; Servaes & Tamayo, 2013), it includes the control variables: research and development (R&D) intensity, advertising intensity, capital intensity, size, leverage, event category, and firm category. Advertising intensity stands for selling, general, and administrative expenditure—which can only be obtained from Thomson Reuters DataStream—as a proxy of advertising expenditure. As McWilliams and Siegel (2000) pointed out, I included R&D intensity and advertising intensity to control for intangibles other than CSR-related issues that may affect firm

value in the long term. Second, like King and Lenox (2001), Servaes and Tamayo (2013), and Hawn and Ioannou (2016), I also added measures frequently used in financial performance analysis as control variables, which included the firm's size (Size) calculated as the log of the total assets, the capital intensity of a firm (CapInt), and the degree to which the firm is leveraged (*Leverage*) with and without a dummy (*year*) to consider the year-specific market environment. Furthermore, in addition to the measures employed in the previous works, this study differentiates as it adopted an event category (*EventCategory*) and a firm's industrial category (*IndCategory*) to control event-category-oriented and industrial-group-oriented issues. As shown in Table 1, for the event category, I sorted events by their features, using KLD and Krüger's (2015) classification. In addition, firms were assigned to 17 industrial categories, following the classification of the Tokyo Stock Exchange: (a) foods, (b) energy resources, (c) construction and materials, (d) raw materials and chemicals, (e) pharmaceutical, (f) automobiles and transportation equipment, (g) steel and nonferrous metals, (h) machinery, (i) electric appliances and precision instruments, (j) information technology (IT) and services, others, (k) electric power and gas, (l) transportation and logistics, (m) commercial and wholesale trade, (n) retail trade, (o) banks, (p) financials (excluding banks), and (q) real estate.

Estimate Models

To test if CSR activities and its visibility have an impact on the long-term firms' value, Hawn and Ioannou's (2016) model was followed. They used

Table 2

Aggregate CSR Visibility Index and ESG Ratings (Top 3 and Worst 3 Companies)

Company Name	**Company code**	**Aggregate CSR Visibiity Index (Positive news – Negative news: 2000-2016)**	**MSCI ESG RATINGS** **(AAC-CCC) (2019)**
Panasonic	6752	116	AA
NEC	6701	86	A
Toshiba	6502	80	BB
Suzuki Motors	7269	-42	CCC
Takata	7312	-48	N.A.
Mitsubishi Motors	7211	-51	B

Source: MSCI ESG ratings: *https://www.msci.com/esg-ratings/issuer*, CSR Visibility Index are created by the author.

the market-value equation, which was introduced by Griliches (1981) and developed by Griliches (1984), Belenzon (2012) and Ceccagnoli (2009). In the equation, the market value of a firm i at time t (V_{it}) stands for the sum of the value of common stock, preferred stock, and total debt net of current assets, and it is a function of the firm's tangible and intangible assets as shown below.

$$V_{it} = q\ (A_{it} + Int_{it})^\sigma$$

where V_{it} denotes the market value of a firm i at time t, A_{it} denotes tangible assets, and Int_{it} denotes intangible assets. Following previous studies on intangibles in the market-value equation (see Lenox et al., 2010), Hawn and Ioannou (2016) employed research and development (RD) and advertising (ADV) expenditures as indexes for intangible assets (Int_{it}) in addition to CSR visibility (CSR_{it}) as follows:

$$Int_{it} = \beta_{RD}RD_{it} + \beta_{ADV}ADV_{it} + \beta_{CSR}CSR_{it}$$

As all variables are in nominal terms, logarithms are applied to obtain the following equations. The parameter σ allows for non-constant scale effects in the market value function.

$$log\ V_{it} = log\ q_t + \sigma\ log\ A_{it} + \sigma\ log\ (1 + \gamma\ (Int_{it}/A_{it}))$$

where $log\ V_{it}$, $log\ A_{it}$ are logarithms of the market value of the firm and tangible assets, respectively, and $log\ q_t$ denotes constant variable or intercept. If the value function shows constant returns to scale, or $\sigma = 1$, log A can be moved to the left side of the equation, and the left-hand-side formula (V_{it}/A_{it}) can be computed with Tobin's q as the dependent variable. The equation, therefore, becomes

$$log\ Q_{it} = log\ V_{it}/A_{it} = log\ q_t + log\ (\gamma\ (Int_{it}/A_{it})) + \varepsilon_{it}$$

where Q_{it} denotes Tobin's q. For Int_{it}/A_{it}, which denotes the intensity of each intangible asset, I created proxies R&D intensity (RD Intensity) and advertising intensity (ADVIntensity) by dividing expenditure by sales. For CSR visibility, as presented in the previous section, a new index (CSR) was created by deducting the number of negative news from the number of positive news by year for each firm to capture the whole CSR-related performance of the target firm of each news (i) in each

year (t). To clarify the direction of causality, or to avoid reverse causality, I took 1-year ($t-1$) and 2-year ($t-2$) lags for all independent variables, and finally, my cross-sectional estimating equations became as follows:

$$log\ Q_{it} = log\ q_t + \theta1Posi_{it-1} + \theta2RD\ Intensity_{it-1} + \theta3ADIntensity_{it-1} + \pmb{\theta4X_{it-1}} + \varepsilon_{it} \quad (1)$$

$$log\ Q_{it} = log\ q_t + \theta1Posi_{it-1} + \theta2CSR_{it-1} + \theta3ADIntensity_{it-1} + \theta4ADIntensity_{it} + \pmb{\theta5X_{it}} + \varepsilon_{it} \quad (2)$$

$$log\ Q_{it} = log\ q_t + \theta1Posi_{it-2} + \theta2RD\ Intensity_{it-2} + \theta3ADIntensity_{it-2} + \pmb{\theta4X_{it-2}} + \varepsilon_{it} \quad (3)$$

$$log\ Q_{it} = log\ q_t + \theta1Posi_{it-2} + \theta2CSR_{it-2} + \theta3RDIntensity_{it-2} + \theta4ADIntensity_{it-2} + \pmb{\theta5X_{it-2}} + \varepsilon_{it} \quad (4)$$

where i indexes news, t indexes time. $Posi_{it}$ is a dummy variable, which is 1 if the feature of each news item is positive and 0 if negative. X_{it} stands for other control variables that may affect a firm's value. Using this cross-sectional model, I ran robust OLS regressions to investigate the long-term effects of CSR activity and visibility on a firm's value.

Results

Descriptive and Regression Results

Table 3 reports descriptive statistics and correlations for all the variables used in the model. None of the reported correlations seem to have any concerns for the analysis. Table 4 demonstrates the regression results with standard errors robust to heteroscedasticity. Models (1) and (3) in Table 4 represent the one-year-lagged and the two-year-lagged equations for the target firm's performance without the CSR visibility index. It appears that the coefficients of positive news ($Posi_{it-1}$, $Posi_{it-1}$) are positive and significant ($\beta = 0.0527$, $p < 0.01$, $\beta = 0.0316$, $p < 0.01$, respectively), suggesting that positive news announcements have a positive relationship with firm value or Tobin's q after one and two years, or in the long-term. Model (2), with CSR visibility index (CSR_{it-1}), also shows that positive CSR news ($Posi_{it-1}$) has a positive and significant impact on Tobin's q after one year ($\beta = 0.0301$, $p < 0.05$).

The model also illustrates positive and significant relationship between the CSR visibility (CSR_{it-1}) and firm value or Tobin's q after one year ($\beta = 0.00497$, $p < 0.01$). However, model (4) demonstrates that not each news announcement but only annual CSR visibility presents a significant positive relationship with Tobin's q ($\beta = 0.00437$, $p<0.01$), indicating after two years or in the longer term, not each announcement of the news but only the annual CSR visibility of each firm affects the firm's value. These statistical results provide several insights to my hypotheses.

First, the results found that positive news announcement has a positive impact on firm value after one year, which is partially consistent with the first hypothesis and Jensen's (2001) enlightened stakeholder theory, suggesting a positive link between stakeholder management and long-term value maximization of firms. These results also indicate the potential revenue increase or cost-reduction effect of CSR-related activities.

Second, the derived results present a positive relationship between annual CSR visibility and firm value, which supports the second hypothesis. As stated in the previous section, CSR visibility enables firms to attract more long-term investors as well as access financial capital and political supports easily.

Finally, although a positive news announcement was found to have a positive effect on firm value, the impact weakened after one year and disappeared after two years by being analyzed with CSR visibility. The result suggests some part of the positive impact of CSR announcement on firm value can be explained by CSR visibility, and the situation becomes stronger in the longer term, offering a condition to my first hypothesis.

Table 3

Descriptive Statistics and Correlations of Variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. $\log Q(t+1)$	1											
2. $\log Q(t+2)$	0.8379	1										
3. Posi	0.0577	0.0359	1									
4. CSR	0.0737	0.0552	0.4715	1								
5. RD Intensity	0.0118	0.0326	0.0034	0.0976	1							
6. ADVIntensity	0.1509	0.1692	0.0906	0.1212	0.3937	1						
7. CapInt	0.2164	0.1906	-0.0453	-0.0327	0.038	-0.1276	1					
8. leverage	0.1585	0.1465	-0.1017	-0.0865	-0.2124	-0.2524	0.2466	1				
9. IndCategory	0.0067	0.0172	0.0732	0.1601	0.0029	0.002	0.228	0.0703	1			
10. Size	0.0255	0.0065	0.0046	0.1171	0.2302	-0.1812	0.2909	0.2378	0.1004	1		
11. EventCategory	-0.1024	-0.097	-0.1639	-0.1651	-0.0024	-0.1418	0.0139	0.0459	-0.0883	0.1017	1	
12. year	-0.0889	-0.0542	-0.0803	-0.1555	-0.0273	-0.0333	0.0018	-0.1443	-0.0114	0.0717	0.0352	1
Obs	6,359	6,351	6,435	6,435	5,249	6,217	6,398	6,431	6,435	6,399	6,435	6,435
Mean	-0.56925	-0.56643	0.65439	0.773116	0.033416	0.198006	0.061433	27.8243	8.580886	21.45215	4.216783	2009.098
Std. Dev.	0.74798	0.75833	0.475604	4.743707	0.029663	0.130015	0.071194	17.47079	3.858885	1.825111	1.630958	4.477824
Min	-6.90776	-6.90776	0	-22	0	0	0	0	1	14.20688	1	2001
Max	3.513722	3.468139	1	16	0.316732	1.065706	2.031213	134.39	17	26.42095	6	2016

Note: Q_{it} denotes Tobin's q. *RD Intensity* and *ADVIntensity* represent R&D intensity and Advertising Intensity, respectively, by dividing expenditure by sales. *Posi$_{it}$* is a dummy variable, which is 1 if the feature of each news item is positive, and *CSR* is an index for visibility of the firm's CSR-related performance. *X_{it}* stands for other control variables, which may affect a firm's value.

Table 4

Regression Results of Cross-Sectional Analysis

Dependent Variable	(1) log_{Qt+1}	(2) log_{Qt+1}	(3) log_{Qt+2}	(4) log_{Qt+2}
Posi	0.0527***	0.0301**	0.0316**	0.0117
	(0.0142)	(0.0151)	(0.0144)	(0.0155)
CSR		0.00497**		0.00437**
		(0.00135)		(0.00152)
RD Intensity	-0.885**	-0.899**	-0.356	-0.368
	(0.352)	(0.353)	(0.344)	(0.345)
ADVIntensity	0.914**	0.900***	0.962***	0.950***
	(0.0862)	(0.0859)	(0.0852)	(0.0847)
CapInt	1.876***	1.903***	1.700***	1.724***
	(0.468)	(0.479)	(0.415)	(0.425)
leverage	0.00473***	0.00486***	0.00521***	0.00531***
	(0.000516)	(0.000517)	(0.000523)	(0.000525)
IndCategory	-0.106***	-0.0117***	-0.00789**	-0.00881***
	(0.00264	(0.00274)	(0.00264)	(0.00273)
Size	-0.00105	-0.00358	-0.00880	-0.0110
	(0.00736)	(0.00755)	(0.00736)	(0.00748)
EventCategory	-0.0228***	-0.0214***	-0.0212***	-0.0200***
	(0.00416)	(0.00416)	(0.00446)	(0.00444)
year	-0.00580***	-0.00502***	-0.00187	-0.00118
	(0.00149)	(0.00149)	(0.00157)	(0.00155)
Constant	10.97***	9.466***	3.209	1.885
	(2.991)	(2.971)	(3.128)	(3.097)
Observations	5,106	5,106	5,106	5,106
Adjusted R-squared	0.120	0.122	0.107	0.108
F	38.26	35.15	36.44	32.94

Note: Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Robustness Check

To mitigate potential concerns, I checked the robustness of my main findings by referencing Servaes and Tamayo (2013). I described each of these concerns in this section.

Other Profitability Indexes

Though Tobin's q is considered to be the best proxy to measure firms' long-term value, previous research has also investigated the relationship between profitability represented by return on asset (*ROA*), return on equity (*ROE*), sales growth (*salesgrow*), return on sales (*ROS*), and CSR-related announcement as well as CSR visibility. Although profitability measures a firm's performance in the short term, the additional regression could confirm if the main analysis results are similar in terms of profitability. I employed

four profitability measures—ROA, ROE, ROS, and sales growth—as dependent variables. Return on sales is calculated by dividing operating income by assets and sales. I used the following model, which includes the feature of each CSR-related new (*Posi*), CSR visibility (*CSR*), R&D intensity (*RD Intensity*), advertising intensity (*ADVIntensity*) with control variables (*X*), to examine the effects. I ran robust OLS regressions for each model.

$$\textbf{\textit{Profitability}} = \theta_0 + \theta_1 Posi_{it-1} + \theta_2 CSR_{it-1} + \theta_3 RD\ Intensity_{it-1} + \theta_4 ADVIntensity_{it-1} + \theta_5 X_{it-1} + \varepsilon_{it}$$

where the control variables (*X*) include the firm's capital intensity (*CapInt*), calculated by dividing capital expenditures by sales; the firm's annual sales (*Sales*) is calculated as the log of sales; the degree to which the firm is leveraged (*Leverage*) is calculated as the ratio of its debt to assets; news event category (*EventCategory*); and the firm's industrial category (*IndCategory*) with and without a year dummy (*year*). The results, presented in models (1) to (4) in Table 5, suggest that ROA, the second-best index to observe the long-term firm's financial performance, showed a similar result to the main analysis, indicating the robustness of my analysis. Controversial effects on

Table 5

Robustness

Dependent Variable	ROA_{t+1}	ROE_{t+1}	$salesgrow_{t+1}$	ROS_{t+1}
Posi	0.191	6.557	0.00301	0.00433**
	(0.189)	(5.324)	(0.0114)	(0.00172)
CSR	0.105***	0.0929	-0.00201***	-0.000329**
	(0.0219)	(0.228)	(0.000756)	(0.000134)
RD Intensity	-28.91***	-136.5***	-0.525*	-0.216***
	(4.368)	(47.98)	(0.278)	(0.0517)
ADVIntensity	2.833***	3.373	0.197	0.0503***
	(1.044)	(17.15)	(0.125)	(0.0115)
CapInt	9.716***	50.24*	0.434**	0.325***
	(2.494)	(29.08)	(0.194)	(0.0386)
leverage	-0.0565***	-0.336*	-0.000295	-0.000681***
	(0.0100)	(0.191)	(0.000576)	(7.00e-05)
IndCategory	-0.114***	-2.114*	0.000942	0.000653***
	(0.0261)	(1.080)	(0.00262)	(0.000289)
Size	0.207***	1.766	0.00132	0.000611
	(0.0653)	(2.052)	(0.00572)	(0.000740)
EventCategory	-0.119***	0.254	-0.00143	-0.00150***
	(0.0433)	(0.745)	(0.00254)	(0.000451)
year	0.0568***	0.183	-0.00129	0.000721***
	(0.0166)	(0.430)	(0.000823)	(0.000157)
Constant	-114.2***	-382.7	2.541	-1.414***
	(33.10)	(814.5)	(1.639)	(0.315)
Observations	5,112	5,112	5,112	5,096
Adjusted R-squared	0.059	0.001	0.012	0.153
F	14.59	9.81	3.33	28.12

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

sales growth and ROS illustrate a negative impact of CSR visibility on the firm's financial performance in the shorter term, which left room for further investigation in the future.

Event Study

To confirm if CSR was in the best interest of investors, I examined the impact of CSR-related media announcements. As what researchers (including Krüger, 2015; Godfrey et al., 2009; and Flammer, 2013), did, I focused on outcomes of corporate behavior in the form of publicly observable events by implementing a short-term event study methodology, which was first introduced by Dolley (1933) and applied to economic issues by MacKinlay (1997). I used 250 trading days ending 50 days before the event date as the pre-event window and analyzed the statistical properties of the 2-day [–1, 0], 3-day [–1, 1], and 2-day [0, 1] CARs around the event date. However, to mitigate the information leakage problem or to identify relevant prior events and control for their effects, I added three windows: 6-day [–5, 0], 6-day [0, 5], and 11-day [–5, 5].

To calculate the normal return, I employed the market model, consistent with MacKinlay (1997), Krüger (2015), and other relevant studies. To test the null hypothesis that the event does not affect the stock returns and examine the significance of the results, I adopted Boehmer et al.'s (1991) t-test (hereafter referred to as the BMP-test), which is adjusted to allow event-induced variance.

Table 6 displays the results of the event study from 2001 to 2016. It reports the CAR means and their BMP t-statistics for overall events. For positive news, the result shows that the impacts are positive and significant before the announcement, namely the [–5, 0] and [–1, 0] windows. However, the impact becomes insignificant afterward. As the results reveal, CARs of listed firms are larger than the market index (TOPIX) for the [–5, 0] and [–1, 0] windows by 0.0904% and 0.0576%, respectively. The impacts of negative announcements are negative and significant for all windows excluding [0, 5], which demonstrates that CARs of listed firms are less than the market index for those windows. These results indicate that investors respond positively before positive news announcements, and negatively before and after negative news announcements in the short-term.

Discussion

In this paper, I examined whether CSR performance and its visibility have an impact on a firm's value in the long term in Japan, using OLS. Different from other studies, I created original proxies for CSR performance and its visibility from the news dataset I collected from the Nikkei Telecom. I also took a lag for the CSR performance variable to mitigate issues arising from endogeneity, especially the simultaneity problem.

The regression results, first, present the positive relationship between a positive news announcement and firm value in the long-term, indicating a positive link between stakeholder management and long-term value maximization of firms as well as the potential revenue increase or cost reduction effect of CSR-related activities. This result is basically consistent with the previous findings, which suggest that CSR activities offer companies advantages through their effect on employees (e.g., Flammer & Luo, 2017; Freeman,

Table 6

Results of the Event Study

	Positive news			Negative news		
windows	mean	t_{BMP}	observations	mean	t_{BMP}	observations
[-5, 0]	0.0904**	(2.176)	4,010	-0.196***	(-2.692)	1,949
[-1, 0]	0.0576**	(2.324)	4,169	-0.187***	(-4.037)	2,126
[-1, 1]	0.0227	(0.771)	4,169	-0.302***	(-5,199)	2,126
[0, 1]	0.00965	(0.397)	4,169	-0.213***	(-4.170)	2,126
[0, 5]	-0.0116	(-0.273)	4,010	-0.113	(-1.367)	1,949
[5, 5]	0.0338	(0.601)	4,010	-0.219**	(-2.028)	1,949

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

1984; Waddock & Graves, 1997), consumers (e.g., Bénabou & Tirole, 2010; Dimson et al., 2015; Puriwat & Tripopsakul, 2018), technology (e.g., Jones, 1995; Albuquerque et al., 2013; Besley & Ghatak, 2007), and corporate governance (Bénabou & Tirole, 2010; Magill et al., 2013; Ramchander et al., 2012). However, the positive impact was found to be accounted for CSR visibility, not the news announcement itself in the longer-term, which offers a condition to my first hypothesis.

Second, through the analysis, annual CSR visibility appeared to have a positive impact on a firm value, which is consistent with my second hypothesis. The result supports the theoretical explanation that firms are able to attract more long-term investors, financial capital, and political supports by strengthening CSR visibility. The outcome also demonstrates the essential role of public visibility in corporate success, which was pointed out by Durand et al. (2019) and Wu et al. (2018). As Flammer and Bansal (2017) and others presented, long-term investors will consider companies who are widely identified as good CSR leaders are more suited for their investment strategy because these companies look stronger than CSR-equivalent firms who did not undergo such stringent screening criteria.

Conclusion, Practical Implication and Future Work

Companies highlighted by their commitment to prosocial values have been attracting their investors and consumers' attention to their social consciences. They gain greater recognition and prestige because of the enhanced highlights that enable them to identify themselves differently from their rivals. This situation leads to a research question of "if" and "how" CSR activities and firm visibility affect firm value for longer periods. This paper explores the link between CSR visibility and the valuation of companies in Japan by presenting empirical evidence with long-term consequences. My findings suggest that, firstly, there is positive impact between positive CSR-related news and the firm's long-term value, although the impact is found to be explained by CSR visibility in the longer-term. Secondly, annual CSR visibility has a beneficial effect on the valuation of the company, which reinforces the theory that companies will draw more long-term investors, strategic resources, and political patronage by improving CSR exposure.

In addition to the theoretical contributions above, the findings in this study also provide practical implications. The results suggest that both a positive CSR-related news announcement and CSR visibility have a positive impact on firm value basically. However, the impact is gradually occupied by CSR visibility, not the announcement, which managers and public relations officers may want to be aware of. In this context, managers are also advised to focus on not only "what they do" but also "how to show" their CSR activities in their longer strategy.

Though this study tried to empirically investigate the impact of CSR-related news and its visibility on firm value, there is still room for future investigation to analyze the system behind the relationship. I carefully collected the news data; however, double-checking by a third party would make the results more robust. Finally, comparisons with markets other than Japan are also open for future study.

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Declaration of ownership

This report is my original work.

Conflict of interest

None.

Ethical clearance

This study was approved by my institution.

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