Disclosure of CSR over the Firm Life Cycle in Japan

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Abstract: This paper investigates how a firm's life cycle affects corporate CSR disclosure. Using data from Japanese firms from 2006 to 2015, the firm life cycle is classified according to Dickinson (2011). The results show differences in disclosure levels depending on the firm life cycle. In the maturity stage, the amount of disclosure is significantly larger while, in the growth stage, the amount of disclosure is smaller. Additionally, there are differences in disclosure levels depending on the type of CSR information. Environment-related information has a significant influence in Japan. On the other hand, there were no significant differences in terms of governance and society. In Japan, stewardship codes have been introduced and reference those of the United Kingdom. For CSR-related information, disclosure should occur in accordance with laws and regulations, and information other than disclosure based on laws and regulations should also be addressed subjectively. The situation of firms has not been considered thus far. In the future, an appropriate disclosure strategy that considers firms' growth stage would be employed to improve firm value.

Key words: corporate social responsibility; disclosure; firm life cycle

JEL codes: M14, M41

1. Introduction

Recently, CSR reports have begun to include information on the environment, society, and governance. It is important to evaluate corporate using this type of information and through dialogue. For this reason, a more detailed disclosure of CSR information is required.

Internationally, changes in integrated reporting are also accelerating. The International Integration Reporting Committee (IRRC) led by the Global Reporting Initiative (GRI) and the sustainability project A4S (Accounting for Sustainability) launched in August 2010 by Prince Charles of the United Kingdom. In September 2011, IIRC released a discussion paper "Toward Integrated Reporting", which stated the necessity to report CSR-related information such as environment, sociality, and financial information.

For investment, the Principles for Responsible Investment (PRI) are a guideline for investment that considers the environment, society, and governance. PRI was an initiative of the United Nations proposed in 2006 and, in 2016, more than 1,500 institutions from more than 50 countries worldwide have become prominent, with the total assets being approximately 6,000 trillion yen (from the PRI website).

Social responsibility investment (SRI), an investment method that determines whether firms are actively fulfilling social responsibility, is expanding in scale. The share of SRI in total investment is over 50% in Europe

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and approximately 20% in the United States. On the other hand, Asia, including Japan, has a low ratio of 0.8% (The Global Sustainable Investment Review, 2014). However, in the future, in addition to further increasing international interest in SRI. SRI is expected to expand even in Japan. For example, the Government Pension Investment Fund, which manages and operates the pension reserve fund, signed the principle in September 2015.

In February 2014, the Financial Service Agency (FSA) introduced the Japanese version of the stewardship code with reference to the stewardship code first introduced in the United Kingdom. For the stewardship code, institutional investors are working to improve corporate value and sustainable enterprise growth through constructive purposeful dialogue (engagement) with investee firms and their business environments. The code fulfills the responsibility to expand the investment returns of customers/beneficiaries over the medium to long term. For long-term investment, future business forecasts are important as well as business forecasts for the current and next fiscal year. CSR information such as climate change, disasters, and resource constraints that affect future corporate performance holds substantial weight.

The corporate governance code has been effective since June 2015. The code establishes a corporate code of conduct as one of the government's growth strategies. The code includes (1) securing the rights and equality of shareholders, (2) proper collaboration with stakeholders other than shareholders, (3) proper disclosure of information and transparency, (4) responsibility of the Board of Directors, and (5) dialogue with shareholders. Our goal is the sustainable growth of corporations and improvement in corporate value over the medium to long term. The code stipulates that firms should collaborate with various stakeholders. Additionally, for non-financial information such as CSR information, proper disclosure based on laws and regulations is required to actively provide information beyond the minimum disclosure norms. Both the stewardship code and the corporate governance code require various CSR information to be considered from a long-term perspective.

Thus, the demand for CSR disclosure is increasing. However, simply increasing CSR disclosure will not lead to an increase in corporate value. Disclosure is important to link CSR information and corporate value. However, corporate disclosure strategies are not uniform. Completing a uniform disclosure external request does not lead to an improvement in corporate value and, in some cases, a decrease in firm value is possible. Rather, the level of desirable disclosure depending on the situation of the enterprise should be determined.

Various factors such as company history, scale, and industry are considered in determining a firm's situation. However, in this paper, we focus on the firm's life cycle. In Japan, firms holding a large amount of cash and with low investment levels are increasing. The promotion of investment is a significant issue. Therefore, some solutions might be found by analyzing the firm life cycle. Diebecker et al. (2017) investigated CSR performance and the firm life cycle. In this paper, however, CSR disclosure is examined rather than CSR performance. Corporate CSR information is provided by SRI expert research firms and financial information service firms such as Bloomberg, Thomson Reuters, FTSE, MSCI, and Toyo Keizai Incorporated in Japan. Moreover, the amount of information has been increasing in recent years.

Monoe (2014) (1) acquired CSR information from corporates' public information and through questionnaires and (2) analyzed and evaluated corporate activities from the viewpoint of CSR based on primary enterprise information. Ratings are provided by other means, but the CSR evaluation of enterprises (1) differed depending on the areas evaluated by the survey company, and there were cases where the evaluation method was not disclosed. It is important to confirm the primary company information on CSR.

That is, when evaluating CSR performance, since the perspective of the evaluation company is reflected, an analysis of the factors may be difficult. On the other hand, when requiring a disclosure level as the criterion of

evaluation, if a company discloses regardless of the quality required, there are drawbacks in that the score can be raised. However, if a range of disclosure items has been selected, in addition to lowering the score when not disclosing compared with other firms in the same industry, the items that are not confirmed cannot be disclosed. Therefore, what seems to be reflected is the company's degree of CSR efforts. Given this, we investigate the relationship between disclosure level and firm life cycle. Additionally, from the viewpoint of disclosure strategy, we investigate whether the influence differs depending on the type of CSR information.

We confirm that there is a difference in disclosure level depending on the firm life cycle. In the mature stage, the amount of disclosure is significantly larger while in the growth stage, the amount of disclosure is smaller.

For disclosure content, environmental-related information has significant influence in Japan. On the other hand, governance items with relatively uniform disclosure did not differ according to the firm life cycle, and there was no substantial difference in social items.

In Japan, corporate governance codes have been introduced, and firms are required to work with investors and various stakeholders. For CSR-related information, proper disclosure is required in accordance with laws and regulations, and information beyond the minimum disclosure required should also be addressed subjectively. However, consideration has not yet been given to firms' situations. Considering the growth stage of a company and establishing an appropriate disclosure strategy is a shortcut to improving corporate value.

One contribution of this paper is that the disclosure level varies according to the firm life cycle and also depends on the CSR disclosure content. CSR disclosure content differs depending on the historical and cultural background of the country. In this paper, Japanese firms' disclosure tendencies are clarified. The second contribution shows a new viewpoint for CSR and the firm life cycle in the field of disclosure research. A third contribution is to show the possibility of increasing the effectiveness of the policy effect by presenting the viewpoint of the firm life cycle with respect to planning and alteration, such as the governance code. Additionally, various studies are being conducted in Japan, Europe, and the United States about the adequate CSR disclosure level in reports, including integrated ones. This current research shows that CSR disclosure content is not uniform across firms, and a more detailed response from surveyed firms can contribute to nationwide policy planning. In addition, regarding disclosure of CSR, with the progress of worldwide responsible investment, there is interest in Europe and the United States as well as in Japan

The remainder of this paper is as follows. In Section 2, we organize our prior research and set up hypotheses. Section 3 shows the research design. Section 4 shows analysis results, and Section 5 concludes.

2. Related Research And Hypotheses Development

2.1 About Disclosure of CSR Information

In a study on CSR information disclosure factors, Legendre and Coderre (2013) clarified the attributes firms are disclosing using the GRI guidelines. Additionally, in Hayashi (2014), various papers related to disclosure factors were categorized through the application of GRI guidelines. Gamerschlag et al. (2011) stated that the pressure from stakeholders affects the disclosure level. In a Japanese study, Tanimoto (2013) insisted that Japanese firms have been disclosing under pressure from overseas stakeholders.

In addition to CSR information, prior research that analyzed the characteristics of disclosed firms for qualitative information in Japan includes the Financial Accounting Standards Organization (2005), Konishi (2008), Harigae (2008), and Nakano (2010). In Konishi (2008), 100 firms listed on the First Section of the Tokyo Stock

Exchange were extracted for risk information, and the number of descriptions corresponding to financial and management risks of firms in the fiscal year ended March 2004 and 2005 was computed. We found a positive correlation between the total amount of risk, total assets, and total sales. Harigee (2008) concluded that a company with large business risk is more active in risk information disclosure. Additionally, Nakano (2010) claimed that regarding "business and other risks" and "MD & A", firms that are large receive considerable attention from the market and have a complicated business structure conducive to the positive disclosure of risk information. If the business risk is high, it will not be reflected in "business and other risks", but a tendency to disclose a large amount of information with respect to "MD & A" will be apparent. Noda (2016) found that firms that are active in the disclosure of qualitative information have a higher ratio of outside directors because of the disclosure content of securities reports. On the other hand, firms with a high debt ratio and firms with a high stable shareholding ratio are reluctant to disclose.

Disclosing CSR activities leads to improvement in firm evaluation (Inoue 2013). Suzuki et al. (2011) addressed the objectives of the CSR report to communicate to stakeholders and gain their trust. This is done through the disclosure of information on their own governance systems, business activities, and environmental and social initiatives in the supply chain. Additionally, KPMG AZSA Sustainability (2011) emphasized the consideration of reputation or brand as motivation for issuing integrated reports.

As mentioned, many of the factors that affect the disclosure of CSR information are being analyzed from the perspective of governance and relations with stakeholders. However, since the disclosure level is also affected by factors such as size, performance, and cash flow, these should also be considered. Thus, we need to consider the firm life cycle.

2.2 The Firm Life Cycle

Many models have been proposed for the firm life cycle. Miller and Friesen (1984) classified the following five stages: "Birth Phase", "Growth Phase", "Mature Phase", "Revival Phase", and the "Decline Phase" and confirm the difference using 54 items. Additionally, Auzair and Langfield-Smith (2005) and Kallunki and Silvola (2008) classified firm life cycles so that respondents could address questions. However, a unified classification method is not necessarily established (Mori, 2016). In this paper, we classify firm life cycles based on Dickinson (2011), which classified firms based on the objective indicator of cash flow change among firms.

2.3 Building a Hypothesis

The factors that firms disclose in CSR information are firm size, performance, firm governance, and relationships with stakeholders according to the firm's situation. Moreover, corporate strategy, organizational structure, and product cycles are affected to various extents depending on the enterprise's environment but, particularly in recent years, the firm environment has changed significantly.

First, to encourage the sustainable growth of firms, rather than short-term interests, it is necessary to pay attention not only to financial information but also to corporate non-financial information such as CSR information. Corporate invisible elements such as human resources, corporate culture, brands, leading business partners, and networks hold substantial weight. By disclosing such information, firms can promote the understanding of corporate value through dialogue with investors and others. Therefore, firms are required to qualitatively and quantitatively explain how non-financial information is understood and linked to corporate value. Therefore, interest in CSR information is increasing.

Additionally, in recent years, Japanese firms increased cash on hand, and more than half of the listed firms became debt managed with cash exceeding interest-bearing liabilities. The growing concern over large risks after

the Lehman Brothers' collapse and lack of promising investment opportunities in recent years have contributed to this capital structure. By disclosing CSR information, factors explaining this type of situation are conceivable.

Japanese firms could operate on a stable, somewhat long-term basis with established shareholders such as business corporations and financial institutions, without facing the threat of acquisition. The introduction of mark-to-market valuation of securities since the collapse of the bubble economy market price evaluation from the fiscal year ended March 2002 along with Basel regulations for banks have promoted the sale of held shares. Therefore, there is a possibility that the influence of major shareholders and financial institutions on CSR disclosure strategy may have changed.

Environmental changes have different influences on a company's strategy throughout the firm life cycle and, as a result, environmental change may have different influences on disclosure strategies. Therefore, the following hypothesis is proposed.

H1: Disclosure level varies depending on the firm life cycle.

In Japan, although the stock ownership structure is changing, the block holder has a strong influence due to cross-shareholdings and financial institutions such as main banks. In the case of firms at the growth and shake-out stages, interest in investment information and restructuring content is greater than CSR disclosure information, whereas for firms entering the maturity stage, there is a possibility that shareowners will be encouraged to actively disclose information, to improve corporate value. Therefore, we propose the following hypothesis.

(H2): Firms actively disclose in cases where the holding ratio of financial institution ownership is high, or the ratio of major shareholders is high.

Next, we examine CSR content. The disclosure of environmental information is expected to be greater at the maturity stage than the start-up and growth stages, and the difference is anticipated to depend on the firm life cycle. On the other hand, for governance information, since much of the content is relatively statutory, it is conceivable that there is little difference across the firm life cycle. Moreover, the field related to sociality is a field in which the type and extent of recently disclosed content are increasing, and it is conceivable that some firms disclose strategically. The potential for this tendency is high among mature firms. Therefore, we set the following hypothesis.

(H3): Disclosure level varies depending on CSR disclosure content (environment, governance, sociality).

3. Research Design

3.1 CSR Disclosure Variables

In this paper, ESG disclosure scores from Bloomberg are adopted as a measure of CSR disclosure. The ESG disclosure score of Bloomberg is expressed by the total score, which is the sum of the three fields of E (environment), S (social), and G (governance). It is calculated from a wide range of disclosure items and considered appropriate to measure the CSR disclosure level. According to Monoe (2014), the data items reflect environmental issues such as CO_2 emissions, water consumption, hazardous waste emissions, and society concerns such as turnover rate, labor union participation rate, and the female employee ratio. Governance represents the ratio of outside directors, a director's term of office, and the number of directors on the board. For the ESG disclosure score, 100 data points are selected for each type of business and, among those data points, the items disclosed from 0 (ESG data for all target items to the range not disclosed) to 100% (disclosure of ESG data for all target items) are standardized by the range.

3.2 Measurement of the Firm Life Cycle

For the measurement of the firm life cycle, in this paper, we classify based on Dickinson (2011) focusing on the change in cash flow mentioned above. The cash flow is classified into three categories: operating cash flow (CFO), investment cash flow (CFI), and financial cash flow (CFF) classified in Table 1 by a plus or minus sign: ① CFO and CFI are minus while CFF is plus for start-up firms; ② CFO is plus, CFI is minus, and CFF is plus for growth firms; ③CFO is plus and CFI and CFF are minus for mature firms; ④ CFO and CFI are plus while CFF is minus; ⑤ all are plus for cash flow; ⑥ all are minus for cash flows; ④ ⑤ ⑥ are shake-out firms; ⑦ CFI and CFF are plus while CFO is minus; ⑧ is minus for CFO, CFI is plus, and CFF is minus; ⑦ ⑧ are classified as declining firms.

Table 1   Firm Life Cycle Classification

		1	2	3	4	5	6	7	8
Classification by each flow	Operating each flow (CFO)	-	+	+	+	+	-	-	-
	Investment each flow (CFI)	-	-	-	+	+	-	+	+
	Financial cash flow (CFF)	+	+	-	-	+	-	+	-
Dickinson (2011)	Stage	Start	Growth	Mature	Shake-out			Decline	

3.3 Control Variables

In this paper, I clarify that there is a difference in the disclosure level depending on the firm life cycle. Since company size and industry type influence the disclosure level, I treat these factors as control variables. The following control variables are adopted based on previous studies such as Diebecker et al. (2017).

We include enterprise-scale logarithm (ASSET), used total asset return (ROA), free cash flow per share (FCF), debt ratio (LEVERAGE), and PBR because of the influence of intangible assets. It is conceivable that the number of years of employment may also be affected, so we adopt the logarithm (AGE) of the number of months since founding to the present. Additionally, we include the industry-type dummy due to the impact of industry and annual dummies because the number of firms that recognize CSR is increasing over time. Table 2 defines the variables.

Table 2   Variable Definitions

Variable	Definition	Remarks
ASSET	Asset	Logarithm
PBR	Stock price net asset multiplier	
LEVERAGE	Equity ration: Equity/total Asset	
ROA	Total assets operating margin	
FCF	Free cash flow per share	
AGE	Number of months since founding	Logarithm
BLOCK	The 10 mager shareholders ration	
FRGN	Foreign shareholding ration	
FINANCE	Financial institution ownership ration	
MANAGER	Management ownership ration	
CSR-T	CSR score	
CSR-E	CSR score (environmental field)	
CSR-S	CSR score (social aspect)	
CSR-G	CSR score (governance field)	

Based on prior research, the expected results are as follows. Large firms are expected to have a large amount of disclosure. When liability dependence is high, the amount of disclosure increases as the risk factor. When profitability is high, and there is abundant cash flow, it is possible that disclosure is active because there is a reduction in the asymmetry of information for investors. Additionally, if the time since start-up is substantial, there is a high possibility of CSR discussions within the company; thus, the disclosure level may be high. We expect that disclosure is aggressive when governance is affected by shareholder composition.

3.4 Statistics Analysis

To investigate our hypotheses, we use multivariate regression analysis with disclosure scores for dependent variables, firm life cycles for independent variables, and control variables. The dependent variable is the disclosure score, which is total (CSR-T), environmental (CSR-E), society (CSR-S), and governance (CSR-G). Independent variables are at each stage of the firm life cycle (START, GROWTH, MATURE, SHAKEOUT, DECLINE). For the control variables, asset size (ASSET), profitability (ROA), equity ratio (LEVERAGE), price book-value ratio (PBR), and free cash flow (FCF) are included with reference to Diebecker et al. (2017). Moreover, we add the firm's life time (AGE) since start-up. For governance-related variables, we include foreign shareholding ratio (FRGN), the 10 major shareholders ratio (BLOCK), financial institution ownership ratio (FINANCE), and executive ownership ratio (MANAGER). The analysis includes annual and industrial dummies.

(Model 1)

$$\text{Disclosure(CSR-T, CSR-E, CSR-S, CSR-G)}_{it} = \beta_0 + \beta_1 \text{LIFESTAGE}_{it}(\text{START, GROWTH, MATURE, SHAKEOUT, DECLINE}) + \beta_2 \text{ASSET}_{it} + \beta_3 \text{ROA}_{it} + \beta_4 \text{PBR}_{it} + \beta_5 \text{LEVERAGE}_{it} + \beta_6 \text{FCF}_{it} + \beta_7 \text{AGE}_{it} + \beta_8 \text{FRGN}_{it} + \beta_9 \text{BLOCK}_{it} + \beta_{10} \text{FINANCE}_{it} + \beta_{11} \text{MANAGER}_{it} + \text{INDUSTRY DUMMY} + \text{YEAR DUMMY} + \varepsilon_{it}$$

Next, we narrow down each firm life cycle and verify whether FCF, ROA and shareholding ratio are affected.

(Model 2)

$$\text{Disclosure(CSR-T)}_{it} = \beta + \beta_1 \text{ASSET}_{it} + \beta_2 \text{ROA}_{it} + \beta_3 \text{PBR}_{it} + \beta_4 \text{LEVERAGE}_{it} + \beta_5 \text{FCF}_{it} + \beta_6 \text{AGE}_{it} + \beta_7 \text{FRGN}_{it} + \beta_8 \text{BLOCK}_{it} + \beta_9 \text{FINANCE}_{it} + \beta_{10} \text{MANAGER}_{it} + \text{INDUSTRY DUMMY} + \text{YEAR DUMMY} + \varepsilon_{it}$$

3.5 Sample

This paper includes listed firms in Japan excluding finance firms for the fiscal year ended March. All settlement data for fiscal year 2006 through fiscal year 2015 are 5,465 firm-year observations. Variables less than 0.5% are winsorized at the 0.5% and 99.5% levels. The CSR disclosure score is obtained from BLOOMBERG ESG and financial data, and governance data are acquired from Nikkei NEEDS Financial Quest.

4. Analysis Results

4.1 Descriptive Statistics

Table 3 shows the overall descriptive statistics.

An analysis of the average value of each firm life cycle (Table 4) shows that the value ASSET is largest for the growth stage (GROWTH) followed by the mature stage (MATURE). The value for PBR is the largest for the mature stage (MATURE). The value for LEVERAGE is highest for the mature (MATURE) staged followed by the shake-out stage (SHAKE OUT). The value for FCF is largest for the shake out (SHAKEOUT) stage followed by the mature (MATURE) stage, and is negative in the start-up stage (START), the growth stage (GROWTH), and the decline stage (DECLINE), which represents the characteristic of the firm life cycle.

Table 3　Descriptive Statistics

Variable	Frequency	Minimum	Maximum	Average	Standard deviation
ASSET	5465	4.01	7.13	5.33	0.63
PBR	5465	0.27	5.23	1.15	0.72
LEVERAGE	5465	5.97	89.46	46.37	19.89
ROA	5465	-6.59	21.11	5.14	4.15
FCF	5465	-2854.36	5398.31	56.94	507.78
AGE	5465	1.54	3.11	2.85	0.24
BLOCK	5465	0.18	0.82	0.44	0.14
FRGN	5465	0.00	0.56	0.16	0.12
FINANCE	5465	0.04	0.55	0.28	0.12
MANAGER	5465	0.00	0.32	0.02	0.04
CSR-T	5465	11.98	55.37	31.27	10.10
CSR-E	5465	2.33	62.02	28.71	14.90
CSR-G	5465	26.79	57.14	45.83	6.34
CSR-S	5465	3.51	54.39	22.68	11.21

　　　For shareholder composition, the growth (GROWTH) and maturity (MATURE) stages show a high value for the foreign shareholding ratio (FRGN) and the financial institution holding ratio (FINANCE), while the start-up (START) and shake-out (SHAKEOUT) stages show a high value for the 10 largest shareholders ratio (BLOCK). The manager shareholding ratio (MANAGER) is the highest in the shake-out stage (SHAKEOUT).

　　　For CSR disclosure scores, the total (CSR-T) is highest in the growth stage (GROWTH) followed by the mature stage (MATURE). Environmental (CSR-E) and society (CSR-S) show high values for the growth stage (GROWTH) followed by the mature stage (MATURE). The value for governance (CSR-G) is high for the mature stage (MATURE) followed by the growth stage (GROWTH).

Table 4　Descriptive Statistics by Firm Life Cycle

	Start	Growth	Mature	Shakeout	Decline
N	226	1222	3433	465	114
ASSET	5.27	5.48	5.30	5.23	5.17
PBR	1.05	1.15	1.17	1.04	0.84
LEVERAGE	31.04	40.17	50.31	43.46	36.75
ROA	1.77	4.45	5.93	3.75	1.09
FCF	-350.45	-79.04	120.02	173.19	-47.25
AGE	2.81	2.85	2.85	2.82	2.84
BLOCK	0.45	0.42	0.44	0.45	0.43
FRGN	0.13	0.17	0.17	0.15	0.11
FINANCE	0.26	0.31	0.28	0.24	0.25
MANAGER	0.02	0.01	0.02	0.03	0.02
CSR-T	29.71	31.95	31.54	28.61	29.53
CSR-E	26.46	29.57	29.15	24.74	27.06
CSR-G	45.08	45.94	46.00	45.26	43.56
CSR-S	21.68	23.56	22.72	20.91	21.37

4.2 Correlations (Table 5)

Table 5 shows the correlations. The start-up stage (START) shows a strong negative correlation between ROA and FCF, and LEVERAGE has a strong negative correlation with the start-up stage (START) because debt is utilized less. The growth stage (GROWTH) shows a strong negative correlation with FCF, and LEVERAGE also has a negative correlation. On the other hand, in the mature stage (MATURE), since performance is stable, there is a strong positive correlation with ROA, FCF, and LEVERAGE. There is no strong correlation with any variable in the shake-out stage (SHAKEOUT). The decline stage (DECLINE) has a strong negative correlation with ROA.

Table 5   Correlations

	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	⑲
①ASSET		0.22	-0.32	0.03	0.07	-0.06	-0.24	0.57	0.38	-0.23	0.40	0.32	0.27	0.39	-0.02	0.13	-0.07	-0.05	-0.04
②PBR	0.34		-0.10	0.45	0.04	-0.09	-0.04	0.30	0.06	-0.01	0.08	0.07	-0.03	0.11	-0.03	0.00	0.05	-0.05	-0.06
③LEVERAGE	-0.30	-0.07		0.37	0.05	-0.01	0.11	0.18	-0.10	0.14	-0.06	-0.04	-0.03	-0.08	-0.16	-0.17	0.26	-0.04	-0.07
④ROA	0.04	0.49	0.39		0.11	-0.11	0.07	0.34	0.05	0.07	-0.03	-0.02	-0.07	0.02	-0.17	-0.09	0.25	-0.10	-0.14
⑤FCF	0.04	0.14	0.18	0.29		-0.06	0.03	0.06	-0.03	0.02	-0.02	-0.02	0.04	-0.03	-0.17	-0.14	0.16	0.07	-0.03
⑥AGE	0.05	-0.06	-0.12	-0.12	-0.10		-0.13	-0.06	0.16	-0.16	0.05	0.06	0.00	0.03	-0.03	0.01	0.03	-0.04	-0.01
⑦BLOCK	-0.26	-0.12	0.16	0.09	0.03	-0.23		-0.19	-0.47	0.12	-0.14	-0.12	-0.12	-0.11	0.03	-0.05	0.02	0.02	0.00
⑧FRGN	0.62	0.35	0.18	0.33	0.13	-0.02	-0.18		0.27	-0.12	0.25	0.20	0.18	0.26	-0.06	0.02	0.05	-0.04	-0.06
⑨FINANCE	0.40	0.16	-0.11	0.07	-0.03	0.25	-0.43	0.33		-0.27	0.23	0.21	0.11	0.17	-0.04	0.12	0.00	-0.12	-0.04
⑩MANAGER	-0.60	-0.23	0.26	0.02	0.03	-0.12	0.11	-0.34	-0.27		-0.20	-0.19	-0.08	-0.15	0.01	-0.03	-0.02	0.07	0.00
⑪CSR-T	0.40	0.16	-0.06	-0.01	0.00	0.15	-0.15	0.26	0.23	-0.34		0.96	0.39	0.74	-0.03	0.04	0.04	-0.08	-0.03
⑫CSR-E	0.34	0.14	-0.04	-0.01	-0.01	0.13	-0.12	0.21	0.22	-0.30	0.96		0.20	0.54	-0.03	0.03	0.04	-0.08	-0.02
⑬CSR-G	0.30	0.03	-0.05	-0.05	0.05	0.08	-0.12	0.21	0.12	-0.19	0.42	0.24		0.33	-0.02	0.01	0.03	-0.03	-0.05
⑭CSR-S	0.40	0.18	-0.09	0.02	-0.01	0.14	-0.13	0.29	0.18	-0.33	0.73	0.55	0.37		-0.02	0.04	0.00	-0.05	-0.02
⑮START	-0.02	-0.05	-0.16	-0.17	-0.29	-0.05	0.02	-0.07	-0.04	0.00	-0.03	-0.04	-0.03	-0.02		-0.11	-0.27	-0.06	-0.03
⑯GROWTH	0.12	0.00	-0.17	-0.09	-0.39	0.04	-0.05	0.03	0.12	-0.06	0.03	0.03	0.02	0.05	-0.11		-0.70	-0.16	-0.08
⑰MATURE	-0.06	0.09	0.26	0.26	0.43	0.02	0.03	0.05	-0.01	0.02	0.04	0.04	0.03	0.00	-0.27	-0.70		-0.40	-0.19
⑱SHAKEOUT	-0.04	-0.06	-0.05	-0.11	0.10	-0.05	0.01	-0.05	-0.12	0.06	-0.08	-0.08	-0.03	-0.05	-0.06	-0.16	-0.40		-0.04
⑲DECLINE	-0.03	-0.09	-0.07	-0.15	-0.10	0.01	-0.01	-0.07	-0.05	0.00	-0.02	-0.02	-0.05	-0.02	-0.03	-0.08	-0.19	-0.04	

(Note) Above: The Spearman rank correlation coefficients. Below: The parametric Pearson correlation coefficients

4.3 Estimations Result

Using model 1, we investigate whether there is a difference in the disclosed amount depending on the firm life cycle. We find that at CSR-T, the amount of CSR disclosure is significantly lower at the 1% level in the growth stage, and there is a significantly higher amount of disclosure at the 1% level in the mature stage. There was no clear trend in the start-up stage (START), shake-out stage (SHAKEOUT), and decline stage (DECLINE) (Table 6). According to hypothesis 1, the disclosure level differs depending on the firm life cycle.

The results reflect a reluctance to disclose CSR information during the growth stage (GROWTH) and positively disclose CSR information in the mature stage (MATURE). In the growth stage (GROWTH) when investment projects proliferate, the focus is placed on the field of investment information, whereas in the maturity stage (MATURE), by disclosing CSR information in a favorable light, the company becomes more visible and appealing to stakeholders such as investors.

The analysis of each variable shows that ASSET is positive at the 1% significance level for each firm life cycle, and firms with large assets are active in disclosure. The ROA is also negative at the 1% significance level

for each firm life cycle. Firms with good business results show negative results for disclosure. FCF is also negative and significant for the growth stage (GROWTH) and the mature stage (MATURE). For shareholder composition, BLOCK is positive at the 1% significance level, leading to disclosure. Meanwhile, MANAGER is negative at the 1% significance level and has a negative effect on disclosure.

Table 6   Estimations of Disclosure by Firm Life Cycle

	B	t		B	t		B	t		B	t		B	t	
	-8.252	-3.645	***	-7.898	-3.504	***	-8.209	-3.640	***	-7.873	-3.483	***	-8.119	-3.594	***
ASSET	7.864	27.322	***	7.905	27.515	***	7.835	27.297	***	7.831	27.241	***	7.852	27.312	***
PBR	-0.129	-0.638		-0.130	-0.642		-0.106	-0.525		-0.116	-0.572		-0.125	-0.614	
LEVERAGE	-0.003	-0.398		-0.008	-0.970		-0.008	-0.990		-0.004	-0.489		-0.004	-0.483	
ROA	-0.145	-3.955	***	-0.157	-4.297	***	-0.174	-4.683	***	-0.155	-4.209	***	-0.146	-3.967	***
FCF	0.000	-1.372		0.000	-2.077	**	0.000	-2.036	**	0.000	-1.456		0.000	-1.570	
AGE	0.351	0.692		0.302	0.596		0.287	0.566		0.336	0.663		0.342	0.675	
BLOCK	4.379	4.462	***	4.453	4.544	***	4.328	4.415	***	4.321	4.401	***	4.389	4.472	***
FRGN	0.625	0.437		0.723	0.506		0.838	0.586		0.699	0.488		0.647	0.452	
FINANCE	2.250	1.866	*	2.556	2.119	**	2.263	1.878	*	2.118	1.753	*	2.247	1.863	*
MANAGER	-15.189	-5.248	***	-14.594	-5.045	***	-14.368	-4.957	***	-14.965	-5.165	***	-15.166	-5.240	***
START	0.709	1.221													
GROWTH				-1.170	-4.191	***									
MATURE							0.920	3.726	***						
SHAKEOUT										-0.579	-1.405				
DECLINE													0.743	0.945	
N	5465			5465			5465			5465			5465		
R2	0.360			0.362			0.362			0.360			0.360		

(Note) *** 1% significant, ** 5% significant, * 10% significant

4.4 Features in Each Firm Life Cycle

From the analysis of the features of each firm life cycle (Table 7) using model 2, ROA shows negative significance at the 1% significance level for the mature stage (MATURE). FCF shows negative significance at the 5% level in the shake-out stage (SHAKEOUT) and negative significance at the declining stage (DECLINE) at the 10% level. The results imply that firms with poor performance and insufficient cash flow are more inclined to disclose CSR information.

For shareholder composition, BLOCK becomes significantly positive at the 1% level for the maturity stage and the 10% level for the start-up stage, but there are no significant results for other stages. FINANCE becomes positively significant at the 1% level in the mature stage. Although it is positive at the 10% level in the shake-out stage, there are no significant results for other stages. These results suggest that major shareholders and financial institutions may be encouraging firms to enter the mature corporate stage by encouraging CSR disclosure to improve their corporate value. However, this influence is not significant at other firm life stages. According to hypothesis 2, firms in the mature stage actively disclose in cases where the holding ratio of financial institution ownership is high, or the ratio of major shareholders is high.

Additionally, MANAGER is negative at the 1% level in the mature stage (MATURE) and the shake-out stage (SHAKEOUT), decline stages (DECLINE) are negative, and the growth stage (GROTH) is negative at the 10% level. Although the start-up stage (START) is negative, it is not significant. It is likely that at the start-up stage, the influence on management disclosure is relatively small. In contrast, when the influence of management is large in the growth stage and, later, there is a negative tendency to disclose.

Table 7　Features in Each Firm Life Cycle

	CSR-T									
	START		GROWTH		MATURE		SHAKEOUT		DECLINE	
	B	t 値	B	t 値	B	t 値	B	t 値	B	t 値
	-16.428	-1.251	-7.877	-1.652 *	-10.186	-3.457 ***	-13.479	-1.707 *	-10.651	-0.695
ASSET	8.743	5.096 ***	8.014	13.958 ***	7.941	21.193 ***	7.860	6.986 ***	9.875	4.010 ***
PBR	-1.813	-2.081 **	-0.698	-1.738 *	0.478	1.729 *	-0.451	-0.600	0.658	0.467
LEVERAGE	0.032	0.578	0.005	0.247	-0.006	-0.553	-0.012	-0.473	0.084	1.686 *
ROA	-0.087	-0.486	-0.030	-0.379	-0.268	-5.327 ***	-0.084	-0.630	-0.459	-1.681 *
FCF	-0.002	-1.411	0.001	1.116	0.000	-1.063	-0.002	-2.231 **	-0.008	-1.871 *
AGE	1.749	0.607	0.486	0.475	0.658	0.983	-0.316	-0.181	-3.633	-1.110
BLOCK	9.464	1.836 *	1.859	0.850	5.236	4.152 ***	4.941	1.565	-1.773	-0.289
FRGN	-7.587	-0.984	4.289	1.442	0.274	0.148	-2.497	-0.471	-14.799	-1.109
FINANCE	-7.741	-1.195	-3.702	-1.487	4.327	2.773 ***	7.647	1.730 *	-3.616	-0.467
MANAGER	-15.205	-1.106	-12.320	-1.775 *	-11.382	-2.902 ***	-20.278	-2.793 ***	-51.185	-3.169 ***
N	\multicolumn{2}{c|}{226}		\multicolumn{2}{c|}{1222}		\multicolumn{2}{c|}{3433}		\multicolumn{2}{c|}{465}		\multicolumn{2}{c|}{114}
R2	0.373		0.381		0.359		0.340		0.365	

(Note) *** 1% significant, ** 5% significant, * 10% significant

5. Additional Check and Discussion

5.1 Analysis Based on Disclosure of CSR Content

In Section 4, we analyzed the CSR disclosure level for each firm life cycle, However, in section 5, we investigate whether there is a difference in disclosure level depending on the CSR content. CSR content extends to environmental and governance items, which usually involve similar disclosure requirements across firms, in addition to social items. Here, we identify which items affect the disclosure level from the three fields of environment (CSR-E), sociality (CSR-S), and governance (CSR-G) (Tables 8-10).

For CSR-E, at the growth stage (GROWTH), the effect becomes negative at the 1% level, and at the maturity stage (MATURE), it becomes positive at the 1% level, which is similar to CSR-T.

For CSR-S, the significance is negative at the 5% level at the growth stage (GROWTH), positive at the mature stage (MATURE), but it is not significant. There is no significant variable in other firm life cycles.

For CSR-G, no significant results were observed at any stage of firms' life cycle.

Table 8　Estimations Based on CSR Disclosure (CSR-E)

	B	t		B	t		B	t		B	t		B	t	
	-19.748	-5.738	***	-19.263	-5.622	***	-19.748	-5.761	***	-19.252	-5.603	***	-19.611	-5.711	***
ASSET	9.675	22.111	***	9.744	22.315	***	9.635	22.086	***	9.631	22.041	***	9.662	22.110	***
PBR	-0.433	-1.404		-0.436	-1.417		-0.399	-1.297		-0.415	-1.347		-0.428	-1.388	
LEVERAGE	-0.003	-0.274		-0.010	-0.842		-0.011	-0.863		-0.004	-0.348		-0.004	-0.341	
ROA	-0.204	-3.643	***	-0.220	-3.967	***	-0.246	-4.370	***	-0.216	-3.864	***	-0.203	-3.628	***
FCF	0.000	-0.433		0.000	-1.111		0.000	-1.071		0.000	-0.484		0.000	-0.585	
AGE	0.577	0.749		0.504	0.655		0.481	0.624		0.558	0.724		0.567	0.735	
BLOCK	6.792	4.553	***	6.909	4.638	***	6.714	4.506	***	6.712	4.497	***	6.809	4.564	***
FRGN	0.754	0.346		0.894	0.412		1.074	0.494		0.851	0.391		0.775	0.356	
FINANCE	2.710	1.478		3.193	1.741		2.736	1.494		2.529	1.377		2.712	1.479	
MANAGER	-26.048	-5.921	***	-25.129	-5.715	***	-24.773	-5.623	***	-25.739	-5.844	***	-26.019	-5.914	***
START	0.882	0.999													
GROWTH				-1.823	-4.293	***									
MATURE							1.436	3.828	***						
SHAKEOUT										-0.808	-1.290				
DECLINE													1.183	0.990	
N	5465			5465			5465			5465			5465		
R2	0.32			0.322			0.322			0.32			0.32		

(Note) *** 1% significant, ** 5% significant, * 10% significant

Table 9　Estimations Based on CSR Disclosure (CSR-S)

	B	t		B	t		B	t		B	t		B	t	
	-21.897	-8.203	***	-21.580	-8.111	***	-21.750	-8.172	***	-21.582	-8.098	***	-21.775	-8.176	***
ASSET	8.457	24.920	***	8.473	24.987	***	8.431	24.887	***	8.428	24.865	***	8.446	24.919	***
PBR	0.314	1.313		0.317	1.325		0.329	1.377		0.325	1.358		0.319	1.333	
LEVERAGE	-0.012	-1.272		-0.015	-1.606		-0.015	-1.552		-0.013	-1.358		-0.013	-1.350	
ROA	-0.105	-2.430	**	-0.115	-2.656	***	-0.122	-2.778	***	-0.113	-2.599	***	-0.105	-2.419	**
FCF	-0.001	-3.699	***	-0.001	-4.157	***	-0.001	-4.076	***	-0.001	-3.850	***	-0.001	-3.906	***
AGE	0.407	0.681		0.372	0.622		0.370	0.619		0.394	0.658		0.399	0.666	
BLOCK	3.850	3.327	***	3.894	3.366	***	3.822	3.304	***	3.817	3.297	***	3.864	3.340	***
FRGN	0.049	0.029		0.128	0.076		0.175	0.104		0.109	0.064		0.068	0.040	
FINANCE	1.036	0.729		1.220	0.856		1.031	0.725		0.957	0.672		1.037	0.730	
MANAGER	-6.575	-1.927	*	-6.193	-1.813	*	-6.165	-1.802	*	-6.446	-1.887	*	-6.550	-1.920	*
START	0.759	1.109													
GROWTH				-0.733	-2.223	**									
MATURE							0.445	1.526							
SHAKEOUT										-0.300	-0.618				
DECLINE													0.991	1.069	
N	5465			5465			5465			5465			5465		
R2	0.278			0.279			0.279			0.278			0.278		

(Note) *** 1% significant, ** 5% significant, * 10% significant

Table 10   Estimations Based on CSR Disclosure (CSR-G)

	CSR-G									
	B	t	B	t	B	t	B	t	B	t
	32.218	23.629 ***	32.291	23.751 ***	32.240	23.714 ***	32.354	23.769 ***	32.314	23.754 ***
ASSET	2.998	17.294 ***	2.999	17.307 ***	2.990	17.283 ***	2.986	17.251 ***	2.988	17.262 ***
PBR	0.129	1.056	0.130	1.065	0.134	1.099	0.134	1.096	0.132	1.080
LEVERAGE	0.005	1.032	0.004	0.903	0.004	0.809	0.005	0.995	0.005	0.987
ROA	-0.059	-2.665 ***	-0.061	-2.764 ***	-0.065	-2.917 ***	-0.062	-2.822 ***	-0.062	-2.799 ***
FCF	0.000	0.035	0.000	-0.138	0.000	-0.213	0.000	0.041	0.000	-0.056
AGE	-0.149	-0.488	-0.156	-0.511	-0.163	-0.535	-0.154	-0.504	-0.153	-0.502
BLOCK	-0.393	-0.666	-0.386	-0.654	-0.405	-0.685	-0.419	-0.709	-0.402	-0.680
FRGN	1.113	1.290	1.129	1.310	1.160	1.345	1.139	1.322	1.131	1.312
FINANCE	2.535	3.490 ***	2.564	3.523 ***	2.536	3.493 ***	2.477	3.404 ***	2.522	3.472 ***
MANAGER	0.334	0.192	0.400	0.230	0.509	0.291	0.434	0.249	0.340	0.195
START	0.191	0.548								
GROWTH			-0.123	-0.733						
MATURE					0.194	1.305				
SHAKEOUT							-0.271	-1.092		
DECLINE									-0.355	-0.750
N	5465		5465		5465		5465		5465	
R2	0.410		0.410		0.411		0.411		0.410	

(Note) *** 1% significant, ** 5% significant, * 10% significant

The results suggest that environment-related CSR information has a major impact in Japan. However, governance items do not differ according to the firm life cycle, and no clear strategy can be observed for social items to compare their disclosure with that in European firms. According to hypothesis 3, disclosure level varies depending on CSR disclosure content (environment, sociality, governance).

5.2 Estimations of the Subdivided Firm Life Cycle

For the analysis in this paper, based on Dickinson (2011), we analyze five categories of the firm life cycle. When classifying by cash flow, the shake-out stage (SHAKEOUT) can be further divided into three stages, and the decline stage (DECLINE) can be subdivided into two stages. Therefore, the segmented firm life cycle is also analyzed.

Per the results, ⑦ (CFI, CFF plus, CFO minus) in the decline stage (DECLINE) becomes significant and positive at the 5% level. Given the gravity of the company's business situation, there is a possibility that disclosure is actively carried out. There were no significant factors in other firm life cycles (Table 11).

Table 11 Disclosure Levels of the Closed Firm Life Cycle

	CSR-T									
	B	t	B	t	B	t	B	t	B	t
	-7.908	-3.500 ***	-8.038	-3.559 ***	-8.023	-3.553 ***	-8.118	-3.597 ***	-8.007	-3.544 ***
ASSET	7.833	27.248 ***	7.844	27.291 ***	7.842	27.290 ***	7.849	27.323 ***	7.840	27.269 ***
PBR	-0.118	-0.582	-0.123	-0.604	-0.120	-0.593	-0.119	-0.585	-0.121	-0.595
LEVERAGE	-0.004	-0.508	-0.004	-0.491	-0.004	-0.472	-0.003	-0.404	-0.004	-0.482
ROA	-0.152	-4.140 ***	-0.150	-4.096 ***	-0.152	-4.133 ***	-0.148	-4.033 ***	-0.152	-4.118 ***
FCF	0.000	-1.397	0.000	-1.577	0.000	-1.608	0.000	-1.532	0.000	-1.575
AGE	0.339	0.669	0.340	0.670	0.340	0.670	0.338	0.666	0.338	0.667
BLOCK	4.315	4.392 ***	4.374	4.456 ***	4.378	4.461 ***	4.360	4.445 ***	4.363	4.445 ***
FRGN	0.696	0.486	0.664	0.464	0.667	0.466	0.677	0.473	0.676	0.472
FINANCE	2.147	1.778 *	2.230	1.849 *	2.209	1.831 *	2.213	1.836 *	2.218	1.839 *
MANAGER	-15.107	-5.219 ***	-15.164	-5.226 ***	-15.100	-5.213 ***	-15.253	-5.271 ***	-15.180	-5.244 ***
SHAKEOUT4	-0.616	-1.271								
SHAKEOUT5			-0.024	-0.011						
SHAKEOUT6					-0.416	-0.570				
DECLINE7							2.686	2.099 **		
DECLINE8									-0.415	-0.426
N		5465		5465		5465		5465		5465
R2		0.360		0.360		0.360		0.360		0.360

(Note) *** 1% significant, ** 5% significant, * 10% significant

6. Conclusion

In this paper, we examined whether there is a difference in the disclosure level depending on the company's life cycle. The investigation showed that there is a difference in the disclosure level depending on the firm life cycle. Particularly at the growth stage (GROWTH), firms are reluctant to disclose and, at the maturity stage (MATURE), disclosure is aggressive. Although CSR disclosure has been studied, firm cycles have not been considered; our results reveal differences in disclosure levels across cycles. Therefore, when discussing corporate disclosure stages, we added a new perspective. Additionally, in the mature stage (MATURE), firms that did not perform well disclosed. In the shake-out stage (SHAKEOUT) and declining stage (DECLINE), firms with lower free cash flows disclosed more. It is possible that CSR disclosure serves the purpose of supplementing financial figures.

Moreover, environmental information takes up a major share of CSR disclosure while the coverage of social information is limited. There is a possibility that CSR disclosure by Japanese firms has not reached a strategic level.

Various studies are being conducted in Japan, Europe, and the United States about the adequate CSR disclosure content in reports, including integrated ones. This current research shows that CSR disclosure content is not uniform across firms, and a more detailed analysis can contribute to nationwide policy planning. In addition, regarding disclosure of CSR, with the progress of worldwide responsible investment, there is interest in Europe

and the United States as well as in Japan

In this research, we analyzed Japanese firms. However, CSR research differs in Japan, Europe, and the United States, and it is necessary to compare it with firms other than Japan. In the future, I would like to compare international firms with European firms where the socialization field is progressing.

Acknowledgments

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