

Corporate-Level Determinants of Integrated Reporting: Evidence from Japan*

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1. Introduction

Global corporate reporting practices have been undergoing significant changes as stakeholders make increasing demands on companies to communicate their financial information as transparently as possible (Rensburg and Botha, 2014). Companies have also been obliged to publish reports on corporate governance (CG) so that users can understand their level of good governance. Besides, many companies are producing sustainability reports to demonstrate their responsible corporate behavior to society as a whole (Garcia-Sanchez et al., 2013; KPMG, 2017). Increased public awareness of environmental, social and governance (ESG) issues has led to increased adoption of corporate social responsibility (CSR) reporting by companies worldwide since the financial crisis of 2008/2009. The observed difficulties in integrating CSR information with traditional financial reporting has led to the emergence of the idea of integrated reporting. Although there are debates on the reporting structure and target groups for CSR reports and integrated reports (IR), some leading companies have begun to integrate corporate information into single documents constituting integrated reporting as a sustainable strategy (Eccles and Kruz, 2010).

Since the publication of the first IR in 2002, the relevance of this form of sustainability reporting has been increasing. However, the research conducted so far has been mostly limited to theoretical investigations

and stand-alone case studies (Eccles and Krzus, 2010). Most of the research presents normative arguments for IR and research examining real practice is scarce (Dumay et al., 2016). Unlike traditional sustainability reporting, which has been widely examined in terms of the patterns, determinants and motivations of its use, it remains unclear why firms adopt integrated reporting (Jensen and Berg, 2012). However, integrated reporting might replace CSR reporting in the long run (Velte and Stawinoga, 2016) if it could become a useful business reporting practice that properly combines regulatory standards and voluntary disclosure (Sierra-Garcia et al., 2013). In this view, it would be of great interest to examine the factors that could explain a firm's decision to employ integrated reporting as the reporting norm.

The Japanese corporate governance system has been distinctly different from its Western counterpart for decades, conventionally characterized by unique features such as its main bank system, large inter-corporate shareholdings, lifetime employment and boards of directors selected from insiders. Economic and financial system reforms by the government, corporate governance restructuring by leading corporations due to extreme global competition, and a rise in foreign ownership have led to the adoption of many Western-like governance features by Japanese firms (Bauer et al., 2008; Sueyoshi et al., 2010). Miyamoto (2018) identified two factors leading to corporate governance reform in Japanese firms: increasing shareholder

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pressure due to the liquidation of stock markets and managerial crisis due to a significant decline in corporate profits, both beginning with the banking crisis in the late 1990s. Since then, Japanese firms started reforms in the two institutional areas of corporate governance and human resource management. There has been a move from traditional stable shareholders to dispersed foreign shareholding. According to CGES data, the mean percentage of foreign ownership in Tokyo Stock Exchange First Section firms increased from 9.95% in 2004 to 15.18% in 2014. These foreign investors, being based in countries following Anglo-American corporate governance systems, have actively encouraged their investees to change their CG and disclosure practices (Aman et al., 2017). Continuous pressure to adopt Anglo-American CG was not the only product of globalization for Japanese business. Globalization, whether through Japanese firms operating internationally or Western corporations operating in Japan — and notably, including banking and business scandals and resulting demands by governmental and non-governmental organizations — created a discussion regarding the use of Western-style CSR practices by Japanese firms (Eweje and Sakaki, 2015). Awareness of Western-style CSR has been evident in Japan since the early 21st century. It can be assumed that big Japanese corporations might have been aware of the notion of CSR long before the issue was actively discussed within Japan due to listing requirements on disclosure for companies cross-listed on North American or European exchanges (Eweje and Sakaki, 2015). However, according to Fukukawa and Teramoto (2009), CSR was formally adopted by Japanese businesses in 2003, and that year is referred to as ‘CSR ganmen’ (the first year of CSR) (cited in Eweje and Sakaki, 2015; p. 133). A recent KPMG Survey (2017) found that in 2017 the global average for corporate responsibility reporting was 72%, but 99% for Japan. Another survey by KPMG on Japan revealed that while the number of companies issuing IR in Japan was only 26 in 2010, it increased to 341 in 2017 (KPMG, 2018). Not only in Japan but throughout the

world, corporate responsibility reporting is increasing due to pressures from governments, regulators and stock exchanges. Of the various practices of corporate responsibility or sustainability reporting, IR is slowly but steadily growing worldwide, including Japan. Preparing an IR is a voluntary practice for companies in most countries, except for South Africa and Denmark (Sierra-Garcia et al., 2013).

In a report on competitiveness and incentives for sustainable growth in 2014 (also known as the Ito Review) by the Japanese Ministry of Economy, Trade and Industry (METI), integrated reporting was seen as a useful tool for promoting dialogue between companies and investors. The Japanese Financial Services Agency (FSA) published a Stewardship Code (2014) for institutional investors. This Code along with the Corporate Governance Code (2015) by the Tokyo Stock Exchange encourages companies to adopt integrated reporting. Based on the above background, this study attempted to understand the possible determinants of IR adoption by Japanese listed firms. As the newest form of reporting, very little is known about the practice of integrated reporting and motives for its adoption. A limited number of empirical studies have investigated country-level features such as political and legal systems, economic development, and cultural characteristics, and company-level features like size, profitability, or industry and board characteristics (Vaz et al., 2016). However, none of these studies has examined the possible determinants of integrated reporting adoption for Japanese firms. This study wants to extend the existing integrated reporting literature by focusing on Japan. To fulfill this objective, the effects of some selected company-level features upon IR adoption have been examined, namely company size, profitability, investors, industry and board characteristics including board size, and board independence. The remainder of this article is structured as follows. Section 2 develops a number of research hypotheses based on existing literature in this field. Section 3 discusses the research methods used. Section 4 analyses the research findings. Section 5 concludes

the study.

2. Hypothesis Development

The scarce literature on factors determining the adoption of integrated reporting by firms has included investigation of the influence of some country-level features (legal system, investor protection, economic development, cultural characteristics) as well as some company-level features (size, industry, verification of the sustainability report). Companies operating in countries with some integrated reporting regulation or from collectivistic societies are more likely to practice integrated reporting (Vaz et al., 2016). Other research showed that integrated reporting is determined by the financial system, educational and labor system, and cultural and economic system of a country, whereas political factors had no significant effect (Jensen and Berg, 2012; Garcia-Sanchez et al., 2013). A comprehensive literature review of integrated reporting studies by Velte and Stawinoga (2016) showed that the decision to implement integrated reporting is influenced by firm characteristics (for example, industry, size and profitability), internal corporate governance variables (for example, board size and board diversity) and external corporate governance variables (for example, legal environment and investor base). While IR preparation by firms can be stimulated by a good number of factors, the present study investigates the influence of some selected firm characteristics and corporate governance variables upon the adoption of integrated reporting by Japanese listed firms.

2.1 Board Size

Board size refers to the total number of executive and non-executive directors on the board of directors at the date of the annual meeting in each fiscal year (Wang and Hussainey, 2013). Board size influences the way directors perform their tasks, and smaller boards increase the participation of board members and the freedom of communication among them (Zahra et al., 2000). A large board having directors with multifunctional backgrounds and

experiences facilitates effective monitoring activities of the board. But an excessively large board might hinder information processing and slow the decision-making process due to rivalry and dysfunctional conflicts among members (Zahra et al., 2000). Based on a cross-sectional study of 113 companies from 12 countries in the Asia-Pacific region, Amran et al. (2014) found no significant association between sustainability reporting quality and board size. Meanwhile, many studies found that larger boards may reduce information asymmetry and provide more voluntary information than smaller ones (Akhteruddin et al., 2009; Said et al., 2009). The above discussion suggests the following hypothesis:

H1: There is a significant relationship between board size and adoption of integrated reporting.

2.2 Board Independence

Inclusion of independent non-executive directors on the corporate board received much attention during the 1980s (Fama, 1980, cited in Chen and Jaggi, 2000). Many studies assumed board independence (measured by the proportion of outside directors) to be positively associated with voluntary disclosure (Jizi, 2017; Lim et al., 2007). Outside directors who are less associated with management are more enthusiastic in encouraging firms to disclose more information to investors (Akhteruddin et al., 2009) as a means to protect their own reputations (Lim et al., 2007). However, based on a sample of 158 Singaporean listed firms, Eng and Mak (2003) found that an increase in outside directors decreases voluntary information. This was in contrast to some prior research. Haniffa and Cooke (2005) found that in Malaysian companies, boards dominated by non-executive directors play a limited role in influencing CSR disclosure, due to the non-executive directors' lack of knowledge and experience and indifferent attitudes towards societal concern. Said et al. (2009), on the other hand, did not find any significant relationship between proportion of independent directors and CSR disclosure. Chen and Jaggi (2000) argued that a higher ratio of independent non-executive directors on the board would result in

more effective monitoring of managerial decisions and limit managerial opportunism. Their study on 87 large Hong Kong firms suggested a positive association between the proportion of independent non-executive directors on corporate boards of Hong Kong firms and the comprehensiveness of disclosure quality. Based on the above discussion, the following hypothesis is proposed.

H2: There is a significant relationship between board independence and adoption of integrated reporting.

2.3 Investors

According to the IIRC (2013), integrated reporting primarily aims to provide information to investors “to enable a more efficient and productive allocation of capital” (p. 2). This is consistent with increased demand for non-financial information by investors (Solomon and Solomon, 2006). An increasing number of market-based researches have observed a positive relationship between CSR reporting and firm value (Dhaliwal et al., 2011, Plumlee et al., 2015). Based on a sample of 1094 manufacturing firms in Japan, Saka and Oshika (2014) also documented that disclosure of carbon management has positive impact on the market value of equity. In a review study, Richardson et al. (1999) identified three reasons for a such relationship. First, voluntary disclosure reduces information asymmetry between management and investors. This is because improved disclosure regarding environmental initiatives and performance can reduce uncertainties about the firm’s future return. This enhances the liquidity of the firm’s shares, thereby lowering transaction costs for investors. Second, CSR can have significant cash flow effects. For example, certain CSR initiatives including environmental protections, reductions in material and energy consumption, and improvements to employee health and safety have direct implications on positive cash flow. Companies can also reduce compliance costs by engaging in voluntary CSR activities. In addition, increased demand for socially and environmentally sensitive products can have an indirect impact upon

companies’ financial performance. Finally, Richardson et al. (1999) argued that socially responsible investors (SRIs) will always value responsible companies above others. These investors are willing to accept lower market returns from investments in firms that reflect their social values. One of the reasons to develop environmental reporting is the increased demand for non-financial disclosure by SRIs. However, empirical studies also documented contrasting relationship between CSR reporting and shareholder value. Richardson and Welker (2001) in their study on Canadian firms found significant positive relationship between social disclosures and cost of equity capital, which implies that improved social disclosures increase cost of equity capital. In an international comparative study, Cormier and Magnan (2007) showed moderate positive impact of voluntary environmental disclosures on the stock market valuation of German companies, but the influence was non-significant for Canadian and French companies. Researchers argued that market reaction to CSR disclosure is contextual and depends on the socio-political environment of the country, types of CSR disclosures, and country’s stakeholder orientation (Brammer et al., 2006; Richardson and Welker, 2001; Dhaliwal et al., 2014). Friedman and Heinle (2016) further argued that the relationship is driven by investors’ preferences and related shareholders base effect. The stock market will react positively only when a substantial portion of company’s investors prefers CSR.

A number of empirical studies, on the other hand, have considered ownership structure as an explanatory variable for corporate social and environmental performance and related disclosure. Taking debt-equity ratio as a proxy for the relative importance of debt holders and stock holders, Belkaoui and Karpik (1989), Cormier and Magnan (1999), Higashida et al. (2005), Prado-Lorenzo et al. (2009), Liu and Anbumozhi (2009) found a negative relationship while Roberts (1992) showed a positive relationship with CSR disclosure. In a recent study on stakeholders’ influence on CSR disclosure, Saka

and Noda (2013) also found a significant positive relationship between creditors and CSR disclosure in Japan. Extant literature also investigates the effects of institutional investors such as pension funds, mutual funds, and socially responsible investments upon corporate social performance (Johnson and Greening, 1999; Motta and Uchida, 2018). Because investment by institutional investors has increased significantly in recent years, they have assumed more power to change the practices of investee firms. Long-term institutional investors prefer firms with better social performance, as this will result in better financial performance in the long run (Johnson and Greening, 1999).

Using Japanese corporate data, Motta and Uchida (2018) investigated the relationship between institutional investors and firms' corporate social performance (CSP) as measured by the Toyo Keizai CSR ranking. They studied this relationship in the context of adoption of "soft law" to advance CSP. As an example, in 2006, the United Nations Global Compact launched the Principles for Responsible Investment (PRI), which encourages institutional investors to follow ten principles related to social and environmental issues in their investment decisions. In the same year, the Japanese Ministry of the Environment also emphasized financial mechanisms to promote environmental protection. Motta and Uchida found that institutional investors, especially domestic institutional investors, have significant influence in improving corporate environmental performance. However, a robust relationship is not seen in social performance such as social engagement, corporate governance, or employee relations. They concluded that "national government measures play an effective role in diffusing PRI and promoting good business practices" through increased monitoring by institutional investors (p. 3). Foreign investors also play a significant role in institutionalization of CSR practice in Japan (Suzuki et al., 2010). Tanimoto and Suzuki (2005) investigated the GRI adoption of the largest 300 Japanese companies, finding that GRI adoption in Japan is positively associated with foreign ownership. However, influence

of ownership by traditional large investors such as big business groups and domestic companies are not significant. They concluded that globalization of business operations including ownership, production and sales could better explain the CSR reporting than the traditional domestic system. In another study, Suzuki et al. (2010) further confirmed this finding.

Historically, corporate ownership in Japan has been dominated by cross shareholding among banks, financial institutions and non-financial corporations. However, the ownership structure has changed significantly in the last two decades. Increased investment by foreign investors has dissolved the cross shareholding and reduced the domination of banks and financial institutions. Nishitani (2009) examined the influence of long-term stockholders, including ownership by other companies, upon corporate decisions to adopt ISO 14001 and found a positive relationship. Tanimoto and Suzuki (2005), however, did not find any significant relationship between GRI adoption and ownership by other listed domestic companies. Based on the above discussion, the following hypotheses are proposed:

H3: There is a significant relationship between corporate debt and adoption of integrated reporting.

H4: There is a significant relationship between institutional investment and adoption of integrated reporting.

H5: There is a significant relationship between the dissolution of cross shareholding and adoption of integrated reporting.

H6: There is a significant relationship between foreign shareholding and adoption of integrated reporting.

2.4 Corporate Size

Firm size is the most widely used determinant to measure the extent and quality of sustainability reporting (Dienes et al., 2016). Extant literature uses a number of proxies for firm size, including total assets, sales revenue, number of employees, market capitalization and number of geographical segments. Almost all studies have observed a positive influence

of firm size on corporate reporting practice (Fifka, 2013). Legitimacy theory considers firm size as a proxy for public visibility. Due to their high visibility, larger companies and especially those listed on stock exchanges are subject to public scrutiny that may come in the form of concerns of the general public, regulatory burden or political intervention (Patten, 1991). As stakeholders' concern for corporate social and environmental performance has increased significantly in recent years, these larger companies need to publish sustainability reports to show their commitment to sustainability issues. Ho and Taylor (2007) further explained the relationship between firm size and corporate disclosure by using agency theory. They argued that larger firms have higher agency costs because of their larger amounts of outside capital. These companies will be interested in disclosing more information to reduce their agency costs. In addition, Ho and Taylor (2007) also noted that the cost of disclosure is relatively low for larger firms because of economies of scale. This understanding suggests the following hypothesis.

H7: There is a significant relationship between corporate size and adoption of integrated reporting.

2.5 Industry Affiliation

Previous studies classify industries as environmentally sensitive or environmentally non-sensitive and investigate the relationship between industry classification and environmental disclosure. More than 90% of these studies have found that environmentally sensitive industries have more incentive to disclose environmental information (Fifka, 2013). Because of their high pollution intensity, these industries receive public scrutiny including regulatory pressure, media attention and public criticism (Brammer and Pavelin, 2006). In one of the earliest studies, Patten (1991) considered industry as a public pressure variable and observed a positive relationship between industries and social disclosure in the USA. Patten concluded that firms in high-profile industries such as petroleum, chemical, and forest and paper use social disclosure

as a means to address the exposure these firms face in the social environment. Cho and Patten (2007) also examined the effect of industry type (environmentally sensitive vs. non-sensitive) upon the relationship between environmental performance and environmental disclosure. They found that environmentally sensitive firms with poorer environmental performance are more likely to disclose monetary information to enhance their legitimacy. In an international comparative study on assurance in CSR reports, Simnett et al. (2009) also argued that industries having greater environmental and social impacts are more likely to adopt assurance in CSR reports to enhance credibility of the reported information. They categorized the mining, production, utilities and finance industries as environmentally sensitive and found a positive relationship with assurance in CSR reports. The above understanding leads to the following hypothesis.

H8: There is a significant relationship between industry affiliation and adoption of integrated reporting.

2.6 Profitability

Existing literature does not show any consistent result regarding the relationship between firm financial performance and social or environmental reporting. Patten (1991) distinguished between economic legitimacy and social legitimacy. He argued that the profitability of a firm can ensure its economic legitimacy; however, social disclosure should be a function of social legitimation. The study supports the view that "social disclosure is more closely related to public pressure variables than economic ones" (Patten, 1991:300). In a study on Canadian firms, Neu et al. (1998) also found a negative relationship between profitability and environmental disclosure. They argued that unprofitable firms are more likely "to use environmental disclosures either to indicate that environmental investments will result in long-term competitive advantages or to distract attention from the financial results" (p. 275). In contrast, other studies considered profitability as a public visibility variable. Highly profitable firms receive intense public scrutiny

and need to be more careful about their legitimacy. These firms need to show that they are operating within the norms of society and that their profits are not at the expense of society. This suggests the following hypothesis.

H9: There is a significant relationship between financial performance and adoption of integrated reporting.

3. Research Design

3.1 Sample Design and Data Collection

This study is based on a sample of Nikkei 225 companies listed on the Tokyo Stock Exchange (TSE). The sample was taken from March 18, 2018 from the Nikkei NEEDS Financial Quest database. The Nikkei 225 index is Japan's most widely watched index of stock market activity at the TSE. Its constituents are the most actively traded companies in the stock exchange, with balanced representation of a wide range of Japanese industries. Given that IR is in an early stage of development, this cross-sectional study focused on integrated reporting practice in the latest available year, 2017. Consistent with other studies (Garcia-Sanchez et al., 2013; Frias-Aceituno et al., 2014), banks and other financial institutions were excluded from the sample because of their different accounting and reporting practices. We also removed companies from the sample that do not contain required data for the analysis. Thus, the final sample consists of 169 companies. Annual reports and/or sustainability reports of 169 companies were collected from the websites of individual companies. Corporate governance data were collected from the Nikkei NEEDS CGES of 2017 and corporate characteristics related data were taken from the NEEDS Financial Quest database.

A broadly agreed upon definition of IR does not exist (Hughen et al., 2014). In this study, we examined whether the sample companies have published integrated reports or not. The dependent variable IR is a binary variable, taking the value 1 if the company publishes and 0 if it does not. At first, we investigated whether the report in each case has integrated financial

and non-financial information into a single document or not. This idea is consistent with the definition of IIRC (IIRC, 2013). We also checked the contents of all the selected reports and read their editorial policy statements (if it is included in the report or on the website of the company). Each report was evaluated based on the following contents: a) management commentary, b) overview of business operations c) corporate strategies and risks d) the value creation process e) governance and remuneration policies, and f) sustainability related disclosure. After examining the incorporation of all this information into the report, the editorial policy section was read carefully to understand the awareness or viewpoint of the management on integrating financial and non-financial information. An editorial policy perspective can be useful to understand the motive of the management on preparing IR (KPMG, 2018). Based on the above scrutinizing process, we considered 96 of our sample companies as integrated reports in 2017.

3.2 Regression Model and Measurements of Variables

The following logit model was used to test the relationship between the dependent and independent variables.

$$IR = \beta_0 + \beta_1 BRD_SIZE + \beta_2 IND_DIR + \beta_3 DEBT + \beta_4 INST + \beta_5 CROSS + \beta_6 FORG + \beta_7 COM_SIZE + \beta_8 IND + \beta_9 PROF + \varepsilon$$

Table 1: Measurements of variables

Variables	Definition of variables	Data Source
IR	Integrated reporting in 2017. A binary dependent variable taking a value 1 if a company publishes IR in 2017, otherwise 0.	Integrated report, Annual report, Sustainability report of companies from companies' website
BRD_SIZE	Number of board of directors	NEEDS-CGES
IND_DIR	Independent outside director ratio. Percentage of independent directors to total directors (based on Corporate Governance Report)	NEEDS-CGES
DEBT	Debt to equity ratio.	NEEDS-Financial QUEST
INST	Ratio of domestic institutional owners. Trust account shareholding ratio+ life insurance special account shareholding ratio	NEEDS-CGES
CROSS	Cross shareholding ratio. Total shareholding ratio by public companies that can hold mutual shares	NEEDS-CGES
FORG	Number of Shares Owned by Foreign Corporations	NEEDS-Financial QUEST
COM_SIZE	Company size. Measured by log of total sales.	NEEDS-Financial QUEST
IND	Industry affiliation. Dummy variable: Environmental Sensitive Industry 1 and Otherwise 0	Environmentally sensitive industries: Mining, Electric appliances, Chemicals, Metal products, Pulp and paper, Pharmaceutical, Iron and steel, Machinery, Nonferrous metal, Electric power and gas.
PROF	Profitability. Return on Investment (ROI)	NEEDS-Financial QUEST

4. Results and Analysis

4.1 Descriptive Statistics and Correlational Matrix

Table 2 reports the descriptive statistics for the variables in the study. The final sample consisted of 169 companies from the Nikkei 225 index. In our sample, the average adoption rate of integrated reporting was 56.8%. The findings also revealed the high dependence on debt of these firms and the significant stakes of

foreign owners in these companies. The average of the foreign shareholding ratios of the sample firms was 29.35%. The average board size was 11 with minimum and maximum sizes of 5 and 25. The average of the ratio of independent outside directors to total directors on the board was 29.16%. The sample contains 48.5% of environmentally sensitive firms.

Table 3 is a correlation matrix of the variables. In general, the independent variables were not highly

correlated. The highest correlation coefficient among independent variables was 0.385, between board size and ratio of independent directors. Therefore, there was no multicollinearity problem among the independent variables. Roberts (1992) noted that bivariate correlation above 0.80 could indicate a harmful level of multicollinearity.

4.2 Regression Results and Analysis

Table 4 lists estimation results of the logit model, showing the relationship between corporate characteristics and integrated reporting. The results indicated that board size has a negative and insignificant relationship with integrated reporting adoption. Hence, H1 was rejected. This finding is consistent with that

reported by Kilic and Kuzay (2018) and Amran et al. (2014), who found an insignificant relationship between board size and corporate disclosures. According to Akhteruiddin et al. (2009), larger boards can reduce information asymmetry and provide more voluntary information than the smaller ones. However, this benefit might be outweighed by the costs related to ineffective communication and lack of coordination in the decision-making process (Kilic and Kuzay, 2018). Moreover, even a larger board would not direct much effort to sustainability and CSR issues, if their interests are not aligned to those issues (Amran et al., 2014).

The coefficient for the ratio of independent directors to total directors was positive at the 5% significance level, showing the influence of independent

Table 2: Descriptive statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
IR	169	0.568	0.497	0	1
BRD_SIZE	169	11.112	3.123	5	25
IND_DIR	169	29.161	12.153	8	75
DEBT	169	158.894	122.913	10.090	734.190
INST	169	19.077	6.751	2.580	45.500
CROSS	169	7.791	5.955	0	27.400
FORG	169	29.346	9.947	10.411	68.303
COM_SIZE	169	5.521	0.707	3.552	7.060
IND	169	0.485	0.501	0	1
PROF	169	6.518	6.632	-8.570	42.260

Table 3: Correlation matrix

	IR	BRD_SIZE	IND_DIR	DEBT	INST	CROSS	FORG	COM_SIZE	IND	PROF
IR	1									
BRD_SIZE	-0.122	1								
IND_DIR	0.253**	-0.385**	1							
DEBT	0.148	0.078	-0.041	1						
INST	-0.044	-0.097	0.081	-0.167*	1					
CROSS	-0.085	0.141	-0.240**	-0.018	0.001	1				
FORG	0.071	-0.051	0.316**	-0.031	0.052	-0.271**	1			
COM_SIZE	0.194*	0.176*	0.019	0.246**	-0.265**	-0.044	0.348**	1		
IND	0.106	-0.138	0.245**	-0.145	0.161*	-0.177*	0.086	-0.096	1	
PROF	-0.078	-0.063	0.028	-0.356**	0.029	-0.140	0.279**	0.102	-0.041	1

Note: **, and * show that the coefficient is significant at 1% and 5% level respectively

Table 4: Regression results

	Coef.	Std. Err.	z	P>z
BRD_SIZE	-0.044	0.062	-0.720	0.473
IND_DIR	0.046	0.018	2.530**	0.012
DEBT	0.002	0.002	1.150	0.251
INST	-0.002	0.027	-0.080	0.936
CROSS	-0.011	0.030	-0.360	0.717
FORG	-0.016	0.020	-0.770	0.439
COM_SIZE	0.682	0.283	2.410**	0.016
IND	0.343	0.354	0.970	0.333
PROF	-0.019	0.028	-0.680	0.494
_cons	-4.035	1.820	-2.220	0.027
Number of obs.	169			
LR chi2(9)	23.940			
Prob > chi2	0.004			
Pseudo R2	0.104			
Log likelihood	-103.602			

Note: ** shows that the coefficient is significant at 5% level

directors upon IR adoption decision. Therefore, H2 was accepted. This result implies that the greater the board independence, the more likely that firms will emphasize on integrating financial and sustainability information. Some other studies also support that a higher proportion of independent directors is related to higher levels of disclosure (Jizi, 2017; Lim et al., 2007; Wang and Hussainey, 2013) and quality of disclosure (Chen and Jaggi, 2000). This finding may have an important implication, particularly, in the context of Japan. Regulatory authorities should work for improved board independence in Japanese listed companies.

Our regression results showed that debt to equity ratio was not significantly associated with IR adoption in Japan. Therefore, H3 could not be supported. It implies that creditors may not have strong preferences for integrating financial and non-financial information. However, this does not mean that they are not interested in sustainability information. Creditors may use other communication tools such as

CSR reports or sustainability reports of the firms, as Japan is one of the leading countries of the world in CSR reporting (KPMG, 2017). In accordance with our analysis, institutional shareholding, cross shareholding, and foreign shareholding have a negative association with IR adoption in Japan. We therefore, rejected H4, H5, and H6. Wang and Hussainey (2013) found an insignificant relationship between institutional ownership and forward-looking disclosure in a study on UK companies. The authors argued that as powerful investors, institutional shareholders might have other efficient means of communicating with the firm's management such as, one-to-one meetings. In a study on Japanese listed companies, Saka and Noda (2013) demonstrated an insignificant influence of stable shareholders on the firm's CSR disclosure. In Japan, the domestic institutional investors or the so-called 'affiliated investors' have long-term relationships with the firms in which they invest (Miyajima et al., 2016). These investors might have access to the private

information of the investing firms.

Our finding of insignificant relationship between foreign shareholding and IR adoption decision contrasted with earlier studies on sustainability reporting (Tanimoto and Suzuki, 2005; Suzuki, et al., 2010). Foreign investment in Japan mainly consists of institutional investment from western countries such as the USA. It could be possible that some of these investors would prefer short term profit rather than long term sustainability of the investee companies (Suzuki, et al., 2010). In a recent study, Motta and Uchida (2018) also failed to document any robust evidence that foreign ownership has affected the improvements in environmental ratings of Japanese companies. In addition, integrated reporting is in an early stage of development. Without any authoritative guideline, investors may not consider this document as a credible source of information. Alternatively, these powerful investors might have access to other private and public sources of information. Our findings also failed to document any significant relationship between cross shareholding ratio and publication of IR. This implies that cross shareholding cannot explain the firm's integrated reporting adoption decision. This is consistent with Tanimoto and Suzuki (2005), who showed that ownership by other listed companies, was not significant in adopting GRI guidelines in Japan.

Consistent with many other quantitative studies on sustainability reporting (Saka and Noda, 2013) and integrated reporting (Frias-Aceituno et al., 2014; Kilic and Kuzay, 2018), in the present study corporate size was found to be positively associated with adoption of IR. The coefficient for company size was positive at the 5% significance level. Therefore, we accepted H7. Larger companies usually face higher agency costs and problems of information asymmetry. In order to reduce such costs, these companies are likely to disclose a higher level of voluntary information to their stakeholders (Frias-Aceituno et al., 2014). On a different note, Kokubu et al. (2001) confirmed that environmental disclosure in Japan is positively influenced by company size, because "the greater the

size of a company, the more political visibility and the more positive about information disclosure that a company becomes" (p. 17).

The present findings also showed that industry affiliation does not have any significant influence upon companies' preferences for IR. So, we could not accept H8. This finding is consistent with Kilic and Kuzay (2018), who revealed an insignificant relationship between industry affiliation and forward looking disclosure. This implies that the involvement of environmentally sensitive industries in sustainability disclosure, as evidenced in earlier literature, is diminishing. In other words, the gap in the disclosure practices between environmentally sensitive and environmentally non-sensitive industries is reducing. KPMG (2017) observed that all sectors have made significant improvements in CSR reporting, including the lagging ones such as technology, media and telecommunication, transport and leisure.

The regression results showed that ROI has a negative and insignificant effect on the adoption of IR. Thus, H9 was rejected. This is consistent with Al-Najjar and Abed (2014) who documented a negative relationship between firm performance and forward-looking disclosure. Siregar and Bachitar (2010) also found that firm performance does not have significant influence on CSR. This means that less profitable companies often attempt to save their reputation in the market by disclosing more voluntary information or to divert the attention of the market from their poor financial performance (Neu et al., 1998).

5. Conclusions

This study examined the associations between some selected corporate characteristics and adoption of integrated reporting by Japanese listed firms. The sample was taken from the Nikkei 225 companies listed on the Tokyo Stock Exchange. This study provides some important insights based upon logit regression analyses. It examined the impacts of firm size, board independence, industry affiliation and profitability upon the use of IR as a reporting vehicle.

The findings of this study include that firm size has a significant positive influence on IR adoption whereas profitability has a negatively influence on it. Industry classification has no significant influence upon the integration of financial and non-financial information. It means that firms operating in environmentally non-sensitive industries are also making improvement in integrated reporting practice. This paper also found that institutional investment, cross shareholding, and foreign shareholding have negative associations with the adoption of IR. Japanese corporate boards are usually large and dominated by insiders. We failed to prove any significant relation between board size and integrated reporting adoption. Finally, greater independence of the board favorably influences the integration of corporate information.

The study has a number of limitations. The sample of the study was taken from the Nikkei 225 companies and it is a cross sectional study based on the year 2017 only. So, the results presented and their implications should not be generalized. Besides, the main objective of this paper was to understand the effects of some selected corporate characteristics on integrated reporting disclosure. In this study, we have taken publication of integrated report as a binary variable (giving the value 1 if a company publishes an integrated report as per our definition, and 0 otherwise). Future research can focus on the extent and quality of disclosure of these reports. Future research can also extend this study by considering multiple years and larger samples.

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Appendix 1
List of Samples

Name of Company	IR=1, Non-IR=0
Ajinomoto	1
Alps Electric	1
ANA Holdings	1
Asahi Kasei	1
Astellas Pharma	1
Chubu Electric Power	1
Dai Nippon Printing	1
Daiichi Sankyo	1
Daikin Industries	1
Daiwa House Industry	1
Denka	1
Denso	1
Ebara	1
Eisai	1
Fuji Electric	1
Fujifilm Holdings	1
Fujikura	1
Fujitsu	1
Furukawa Electric	1
GS Yuasa	1
Hitachi	1
Hitachi Construction Machinery	1
Hitachi Zosen	1
IHI	1
Inpex	1
Itochu	1
JGC	1
Jtekt	1
JXTG Holdings	1
Kajima	1
Kansai electric power	1
Kawasaki Heavy Industries	1

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Kawasaki Kisen	1
KDDI	1
Konica Minolta	1
Marubeni	1
Marui Group	1
Meiji Holdings	1
Mitsubishi	1
Mitsubishi Chemical Holdings	1
Mitsubishi Heavy Industries	1
Mitsui	1
Mitsui Chemicals	1
Mitsui Engineering & Shipbuilding	1
Mitsui Fudosan	1
Mitsui O.S.K. Lines	1
NEC	1
Nichirei	1
Nikon	1
Nippon Kayaku	1
Nippon Steel & Sumitomo Metal	1
Nippon Telegraph & Telephone	1
Nippon Yusen	1
Nissan Chemical Industries	1
Nisshinbo Holdings	1
Nitto Denko	1
NSK	1
NTN	1
NTT Data	1
NTT Docomo	1
Obayashi	1
Oji Holdings	1
Oki Electric Industry	1
Okuma	1
Olympus	1
Panasonic	1
Recruit Holdings	1

Ricoh	1
Screen Holdings	1
Seiko Epson	1
Shimizu	1
Shionogi	1
Sojitz	1
Subaru	1
Sumitomo	1
Sumitomo Chemical	1
Sumitomo Dainippon Pharma	1
Sumitomo Heavy Industries	1
Sumitomo Metal Mining	1
Taisei	1
Taiyo Yuden	1
Takeda Pharmaceutical	1
TDK	1
Teijin	1
Tokyo Electric Power Company	1
Tokyu Fudosan Holdings	1
Toppan Printing	1
Toto	1
Toyobo	1
Toyota Motor	1
Toyota Tsusho	1
Ube Industries	1
Yahoo Japan	1
Yamato Holdings	1
Yaskawa Electric	1
Yokogawa Electric	1
Advantest	0
Amada Holdings	0
Casio Computer	0
Central Japan Railway	0
Chiyoda	0
Citizen Watch	0

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Comsys Holdings	0
DeNA	0
Dowa Holdings	0
East Japan Railway	0
FANUC	0
Furukawa	0
Haseko	0
Hino Motors	0
Honda Motor	0
Isetan Mitsukoshi Holdings	0
Isuzu Motors	0
Japan Steel Works	0
JFE Holdings	0
Keio	0
Keisei Electric Railway	0
Kikkoman	0
Kobe Steel	0
Komatsu	0
Konami Holdings	0
Kyocera	0
Maruha Nichiro	0
Mazda Motor	0
Minebea Mitsumi	0
Mitsubishi Electric	0
Mitsubishi Estate	0
Mitsubishi Logistics	0
Mitsubishi Materials	0
Mitsubishi Motors	0
Mitsui Mining & Smelting	0
NGK Insulators	0
NH Foods	0
Nippon Express	0
Nippon Light Metal Holdings	0
Nippon Paper Industries	0
Nippon Sheet Glass	0

Nippon Suisan	0
Nissan Motor	0
Nisshin Seifun Group	0
Nisshin Steel	0
Odakyu Electric Railway	0
Osaka Gas	0
Pacific Metals	0
Pioneer	0
Secom	0
Shin-Etsu Chemical	0
Sky Perfect JSAT Holdings	0
Softbank Group	0
Sony	0
Sumitomo Electric Industries	0
Sumitomo Osaka Cement	0
Sumitomo Realty & Development	0
Suzuki Motor	0
Taiheiyu Cement	0
Takara Holdings	0
Terumo	0
Tobu Railway	0
Toho Zinc	0
Tokuyama	0
Tokyo Electron	0
Tokyo Gas	0
Tokyu	0
Toray Industries	0
Tosoh	0
Toyo Seikan Group Holdings	0
Unitika	0
West Japan Railway	0
Yamaha	0