

# Corporate Governance and Transparency in Japan

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## Abstract

Corporate governance (CG) reformists typically presume better-governed companies are more transparent to investors. We focus on CG and transparency in Japan, where CG has been an ongoing issue. Using local ratings of Japanese companies' CG, and data on corporate disclosures and their associated stock returns, we do find better-governed Japanese companies have made more frequent and timelier disclosures, and that their share prices have reflected value-relevant information earlier. While these results hold for good news, they do not hold for bad. Consequently, governance guidance in Japan may not have resulted in both timelier and more balanced release of newsworthy information.

JEL Classification: C26, G34, G39

Keywords: Corporate Governance; Transparency; Disclosure; Price Discovery; Timeliness.

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# Corporate Governance and Transparency in Japan

## 1 Introduction

We ask the question, how are corporate governance (CG) and transparency related in Japan, a country where CG has been a continuing issue? Japan is a good setting for our study because although it has a mature, non-Western economy with one of the largest equity markets in the world, historically Japanese firms have not been viewed as particularly transparent to outsiders. There are a number of reasons for taking that view. For example, Japan is classified as a code-law country with stakeholder CG (Ball *et al.*, 2000). Code law countries typically offer less investor protection and have weaker enforcement than common law countries such as the UK or USA (La Porta *et al.*, 1998). Features of stakeholder CG include insider-dominated boards of directors, substantial cross-shareholdings among affiliated firms, and a main bank which provides loan capital to companies in its group as well as being an influential shareholder (Yoshikawa & McGuire, 2008). Close relationships between stakeholders in code law countries mean information asymmetry can be resolved via private communication rather than public disclosure. So it may be unsurprising that a cross-country study found Japan had the least timely incorporation of economic losses into earnings, i.e., lower earnings timeliness in the “Basu (1997)” sense (Ball *et al.*, 2000). A second example is that many Japanese companies still inhibit shareholders from attending more than one annual meeting by holding their meetings on the same day: for example, in 2014 just under half (49.7%) of Tokyo Stock Exchange (TSE) First Section firms held their annual meeting on the same day (TSE, 2015b).

Following the banking crisis in the early 1990s, firms’ disclosure practices may have changed as the CG of Japanese firms has evolved. Cross-shareholdings and main bank ownership have decreased, while foreign ownership has increased (Fujiyama *et al.*, 2020). At the same time the average number of board members has declined and the number of outside directors has risen (TSE, 2015b). From 2003 companies could choose either the traditional two-tier CG structure with a board of directors plus a board of corporate auditors, or the “committee” system of a board of directors with three principal board committees (Itami, 2005). Since 2004 the TSE’s CG Principles have underscored the importance of good CG and transparent disclosure practices (TSE, 2004). Also, since 2010 Japanese companies could adopt International Financial Reporting Standards (IFRS) and by July 2020 about 200 companies, mainly large multinationals, had chosen to do so (Japan Exchange Group, Inc. [JPX], 2020a). This voluntary adoption of IFRS has been received favourably by the market (Sato & Takeda, 2017), and potentially signals a commitment to greater accounting quality and transparency. From these changes it would appear that a significant number of Japanese firms may have become more shareholder-oriented and as a result more transparent to their shareholders.

We adapt measures of transparency in Beekes *et al.* (2016b): the frequency and timing of disclosures by the firm itself (which the board controls), and the timeliness or speed of share price adjustments (which transcend the board’s control in that they reflect information from any relevant source). The Nikkei Corporate Governance Evaluation System (CGES) is our source of a firm’s CG quality, an evaluation system customised for Japan. While CGES includes familiar concepts (such as the size and composition of the board of directors and incentives offered to directors), it extends to CG characteristics especially significant in Japan (e.g., the level of cross-shareholdings, banking arrangements, and the composition of the board of corporate auditors.) Our data relate to 1,754 Japanese companies listed in the TSE’s First Section and financial years ending between 1 August 2003 and 31 July 2013.

Results show firms whose CG is better (rated more highly by CGES) make more frequent disclosures and their disclosures are earlier in the year. This is consistent with cross-country evidence in Beekes *et al.* (2016b). We also find firms with better CG have significantly faster price discovery when the share market judges the news to be good. However, when the news is bad the speed of price discovery is unrelated to CG, which may be of concern.

We contribute to both the disclosure and CG literatures. We provide evidence on whether better CG structures are associated with greater transparency in Japan, where firms have been moving towards more shareholder-oriented CG. We find that efforts to encourage better CG have not corrected Japanese managers’ reluctance to disclose negative information. We improve on the methodology of Beekes *et al.* (2016b) by utilising a highly regarded and country-specific source of CG ratings, extending the sample period, focussing on one country thereby avoiding the need to control for country-level socio-economic factors, expanding the models that are fitted, and refining the measurement of the variables, for example to allow for lags in reporting financial results. Finally, we document behavioral differences with respect

to good and bad news that may be important when framing any future disclosure requirements.

The next section reviews the literature and background to our study. Sections 3 and 4 cover the data and methods we use. The results are set out and interpreted in section 5 while section 6 summarises several robustness checks we made. Section 7 covers changes in institutional arrangements in Japan since the end of our sample period and summarises their implications for studies such as ours. The final section contains our conclusions.

## 2 Background and Related Studies

### 2.1 Why is Disclosure Important?

Firms disclose information to the share market to help external parties (investors) keep up-to-date on each firm’s performance. Greater transparency can also help resolve market uncertainty about future performance. A significant literature documents benefits of greater disclosure, such as a lower cost of equity capital (Botosan, 2000), less idiosyncratic risk being borne by the shareholders (Kitagawa & Okuda, 2016), and a reduced cost of debt (Sengupta, 1998). Greater disclosure may be beneficial but it is costly so that the amount of information a firm will optimally disclose is limited (Verrecchia, 1983).

A disclosure needs to be timely if it is to be useful to external parties. However, managers may intervene in the timing of a materially price-sensitive disclosure, for example if they plan to vary the number of shares or options they hold, or if their firm is seeking additional funding on better terms. In the case of good news (news that signals better than expected performance to outside investors) Kothari *et al.* (2009) find managers of U.S. firms tend to accelerate disclosures. Timely disclosures of bad news may be more important where the firm faces greater risk of litigation for non-disclosure of bad news (Sengupta, 2004), or where managers wish to protect themselves against the risk of future litigation (Skinner, 1994).

Depending on the environment, there could be either a complementary or a substitution relation between the quality of a firm’s CG and its disclosure policies. A complementary relation is typically envisaged by market regulators and stock exchanges (including the TSE, see below) when they advocate greater market transparency. A substitution relation would exist where costly internal CG structures are adopted to mitigate the cost of reduced transparency. A complicating factor is that disclosure practices can vary across firms due to differences in their optimal disclosure policies and in their ability to enforce those policies (Core, 2001).

Prior research documents a complementary relation between CG and disclosure (Beekes & Brown, 2006, hereafter BB06; Beekes *et al.*, 2015; 2016a). Individual country studies (BB06; Beekes *et al.*, 2015; 2016a; Hass *et al.*, 2014) also find a complementary relation between CG and the timeliness of price discovery (i.e., prices are *more* timely). However, a cross-country study finds a substitution relation (i.e., better CG is associated with *less* timely price discovery) in common and code law countries (Beekes *et al.*, 2016b). We study the relation between CG and transparency in Japan, a code law country which has been adopting CG structures oriented more towards shareholders.

### 2.2 The Japanese Environment

The TSE expects firms to disclose price-sensitive information publicly in a timely and unbiased manner, and not to leak it selectively to outside parties. A detailed list of required disclosures relating to performance and operations is published by the TSE (JPX, 2020b). The TSE highlights the importance of disclosing “*all* material matters” (TSE, 2004, p. 11, emphasis added). One implication is that no disclosure of a material matter should be withheld or delayed, regardless of its favourability (i.e., whether it is good or bad news). Timely *and* full disclosure is expected by the TSE, without exception. We expect better governed firms are more likely to comply with this principle.

The TSE’s March 2004 “Principles of CG for Listed Companies” comprised five basic principles including the rights of shareholders (Principle 1), disclosure and transparency (Principle 4), and the responsibilities of boards of directors, auditors, boards of corporate auditors, and other relevant groups (Principle 5); see TSE (2004, pp. 7-13) for details. These principles did not impose the same CG structure on all companies. Instead they were intended to provide a basis for Japanese companies to compare their CG with each other (TSE, 2004). Revisions to these principles in December 2009 aimed to encourage more effective monitoring of management.<sup>1</sup> Section 7 outlines further changes after our sample period.

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<sup>1</sup>The use of “highly independent outside auditors” with “an in-depth knowledge of finance/accounting” was recommended (TSE, 2009, p. 11). This was in response to criticism (for example, see Buchanan, 2007) that boards of corporate auditors

Changes to CG may have impacted both monitoring of managers and incentives for transparency. For example, since the banking crisis in the 1990s, bank ownership and cross shareholdings have decreased (Fujiyama *et al.*, 2020) thereby enabling greater holdings by overseas (foreign) investors. CGES data show foreign ownership in TSE First Section firms ranges from 10% to 13% on average during our sample period. Foreign investors, who typically originate from countries with shareholder-focussed CG, bring a different focus on CG from that of traditional large shareholders in Japan (Desender *et al.*, 2016; Aguilera *et al.*, 2017). Instead of a supportive relation with management, foreign shareholders emphasise closer monitoring of management, greater disclosures and improving firm performance.

Japanese managers have prioritised long-term performance and employee interests (Ito, 2014). Increased monitoring by foreign investors may have changed this priority. For example, Fujiyama *et al.* (2020) document instances of lower income smoothing during the 1990s and early 2000s, which they attribute to changes in ownership structures. Foreign ownership may also make IFRS adoption more likely (Sato & Takeda, 2017).

The monitoring role of boards, and in particular of outside (independent) directors, has been emphasised (Fama & Jensen, 1983). However, only companies with the committee system in Japan are required to appoint outside directors. In the committee system, the three board committees (audit, nomination and compensation) must have a majority of outside directors (TSE, 2004).<sup>2</sup> By 2012 only 2.5% of TSE First Section companies used the committee system. Of the 97.5% companies using the corporate auditor system, over half (54.2%) had at least one outside director (TSE, 2013). Nonetheless, given that many boards remain insider-dominated, there is a question of how effective outside directors may be (Buchanan *et al.*, 2014; Allen *et al.*, 2018). For example, Desender *et al.* (2016) suggest independent directors can only be effective when the level of foreign ownership reaches a critical mass. It is by no means clear that the voluntary appointment of outside directors, per se, will increase a firm's transparency.

Another means to resolve the agency problem is to increase managerial equity ownership. Historically Japanese managers have had relatively small shareholdings relative to managers in other countries (Kaplan, 1994). Stock options were not permitted until 1997 in Japan and there remains relatively low usage of stock options (Basu *et al.*, 2007; TSE, 2015b). To illustrate, in 2006 only 30.9% of TSE First Section firms used stock options (TSE, 2007) and their usage remained at a comparable level throughout our sample period (TSE, 2013).<sup>3</sup> Thus, relative to say USA, other aspects of CG may have a greater role in aligning the interests of Japanese managers with the interests of external parties.

The managerial labour market and reputation effects can also influence the disclosure decision. However, given the relatively low risk of litigation (Ginsburg & Hoetker, 2006) and the expectation of lifetime employment in Japan (Buchanan, 2007),<sup>4</sup> managers may have had little incentive to build a reputation for credible and timely disclosures. Nonetheless, their incentives may have grown as foreign investors have sought greater transparency from the companies in which they invest. It may also encourage timelier disclosures, particularly of bad news, consistent with Aguilera *et al.* (2017).

### 3 Sample and Data

We obtained data for non-financial listed Japanese firms with financial years ending between 1 August 2003 and 31 July 2013. We restricted the sample to firms in the TSE First Section, which includes the largest companies. Financial and industrial data were collected from a variety of sources (detailed below) then matched to the CG data, yielding a final sample of 14,116 firm-year observations on 1,754 unique firms.<sup>5</sup>

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were not adequately prepared to be effective monitors.

<sup>2</sup>From 2003 companies could choose either the traditional two-tier CG structure with a board of directors plus a board of corporate auditors, or the committee system, which comprises the board of directors plus three board committees. For further details see TSE (2004). One potential reason for the lack of popularity of the committee system is scepticism about the ability of outside directors to evaluate the performance of inside directors (Itami, 2005). Chizema & Shinozawa (2012) find more experienced firms, firms which are cross-listed in the US, and firms with greater foreign ownership are more likely to adopt the committee system.

<sup>3</sup>Stock options are unpopular as many firms consider them to be short-term oriented (TSE, 2013). In the TSE survey of incentives offered by First Section firms: 29.6% used stock options, 27.4% used alternative performance-based incentives, and 41.3% used other incentives, primarily bonuses (TSE, 2013, p. 64). We are unable to comment on the percentage of directors' remuneration in the form of stock options due to a lack of data.

<sup>4</sup>The Financial Instruments and Exchange Act (FIEA) applies to fiscal years beginning on or after April 2008, provides greater penalties for non-disclosure of required information, and is intended to increase transparency (Kawaguchi, 2009; Wisenbaker, 2010).

<sup>5</sup>The number of observations by CGES year (2004–2013) is as follows: 1134, 1323, 1402, 1455, 1484, 1489, 1466, 1447, 1453 and 1463.

We source company announcements (hereafter ‘documents’) from the Timely Disclosure Network (TD-Net).<sup>6</sup> Firms’ market values are sourced from the CGES BASE files; leverage (ratio of total liabilities to total assets) is from the CGES INDEX files; daily share prices and returns are sourced from Financial Data Solutions; and the date of the annual earnings announcement comes from one of TD-Net, Bloomberg, Institutional Brokers’ Estimate System (I/B/E/S), Nikkei’s financial database (NEEDS) and Worldscope.<sup>7</sup> Other firm-specific financial data are sourced from the Nomura Research Institute. We were unable to obtain Global Industry Classification Standard data for all companies so we resorted to Nikkei industry classifications. Because these classifications are too detailed for our purposes, we grouped the 36 Nikkei industry classifications into 12 sectors, designated “industry groups”.<sup>8</sup> Firm-level ratings of CG quality are obtained from CGES, which rates a firm’s CG on information contained in public disclosures. CGES ratings are available more widely, but we use those for TSE First Section companies only. Ratings are reported as of the beginning of August each year. We assume CG data reported as of August of year  $t$  relate to financial years ending in the previous 12 months (i.e., between 1 August of year  $t - 1$  and 31 July of year  $t$ ).

## 4 Research Method

We model a firm’s transparency as a function of its CG quality plus a set of control variables. Equation (1) depicts our models in generic form:

$$\begin{aligned} \text{DepVar}_{it} = & \beta_0 + \beta_1 \text{CG}_{it} + \beta_2 \text{GoodNews}_{it} + \beta_3 \text{GoodNews}_{it} \cdot \text{CG}_{it} \\ & + \beta_4 \text{Size}_{it-1} + \beta_5 \text{Leverage}_{it-1} + \beta_6 \text{Volatility}_{it} \\ & + \gamma \text{Industry}_i + \delta \text{Year}_t + \epsilon_{it} \end{aligned} \quad (1)$$

DepVar is the measure of transparency (disclosure or timeliness, detailed below); CG is Corporate Governance (also detailed below); GoodNews is a dummy variable, which takes the value of 1 when the firm’s share price outperforms the market index over the year to the announcement date plus 14 days, and 0 otherwise; GoodNews  $\cdot$  CG is an interaction term; Size is the natural log of the firm’s market value of equity, measured at the end of the previous financial year; and Leverage is the ratio of total liabilities to total assets, also measured at the end of the previous financial year. When the dependent variable is based on disclosure documents, Volatility is the standard deviation of the daily unadjusted log return in the 90 days immediately prior to the period over which the dependent variable is computed. When the dependent variable is the timeliness of prices, Volatility is the standard deviation of daily market-adjusted log returns over the timeliness measurement period. Industry and Year are indicator variables;  $i$  and  $t$  are firm and year subscripts, respectively; and  $\epsilon_{it}$  is the error term.

Models are estimated using pooled Ordinary Least Squares (OLS) methods, with standard errors clustered by firm. We use pooled OLS rather than fixed effects panel data methods due to the lack of variation in some aspects of CG across our sample period.<sup>9</sup>

### 4.1 Dependent Variables: Measures of Transparency

We adapt measures of transparency in Beekes & Brown (2007) and Beekes *et al.* (2016b). There are two sets of variables relating to: (i) the frequency and timeliness of documents, and (ii) the timeliness of prices. All measures relating to documents are calculated over 365 calendar days ending on the firm’s annual earnings release date, denoted as day 0. For the timeliness of prices measures, we use a 365 day period ending 14 calendar days after the annual earnings announcement, to allow the share price to settle after the announcement. The timeliness measures we use have been developed over time but owe their origin to Ball & Brown (1968). As the measures we use are derived from prior literature, we defer detailed discussion of them to Appendix A.

<sup>6</sup>TD-NET captures both mandatory and voluntary disclosures to the TSE. All documents are assigned a three-digit classification code by the TSE. If a document is assigned more than one classification code, we still treat it as a single disclosure.

<sup>7</sup>The identification of earnings announcement dates was a complex process in which we triangulated dates from the five sources. Where differences in the announcement dates were identified, we compared the current and adjacent financial year end dates and examined the respective reporting lags. We then recorded the earliest plausible announcement date.

<sup>8</sup>Further information is available from the corresponding author.

<sup>9</sup>For example, the CGES score for the level of adoption of board committees [FLG\_COMM] and for share ownership by directors [DIR] are relatively unchanged throughout the period (not tabulated).

The first variable, Docs, counts the number of documents a firm lodges with the TSE over the year. Ldocs is measured as the natural log of one plus Docs. We use three variables to examine how quickly value relevant information is released through documents: one for all news (TdocsAll), and one each for good and bad news (TdocsGood and TdocsBad).<sup>10</sup> Smaller values of TdocsAll, TdocsGood and TdocsBad reflect earlier (i.e., more timely) release of value-relevant documents to the TSE. The intuition behind these measures is that more transparent firms release their value-relevant documents earlier in the year.

Next, we examine the timeliness of prices, i.e., how quickly value relevant information is incorporated into share prices. The value-relevant information event we focus upon is the firm’s announcement of annual earnings, which remains of paramount importance to investors (Ball & Brown, 2019). The first metric, T, is an overall measure of the timeliness of prices. The intuition behind this measure is as follows: if a particular firm releases value-relevant information more quickly and it is incorporated rapidly into its share price, then T will be smaller. We use Timeliness Deflated, TDef, as an alternative measure of overall timeliness to control for idiosyncratic share price volatility over the year (BB06).

We also use timeliness of prices variables that take into account the favourability of news: specifically the timeliness of price discovery for good and bad news, TGood and TBad respectively.<sup>11</sup> In addition, we use a variable for the timeliness for all news, TAll, which is a weighted measure, where the weights relate to TGood and TBad. TAll is an alternative measure to T and TDef as it reflects the timeliness with which all value-relevant news is captured in the firm’s share price. Smaller values of TGood, TBad and TAll reflect faster (more timely) price discovery.

Our measures of transparency have their limitations so in sensitivity analysis we consider alternatives, including an independently-sourced, information-based measure.

## 4.2 Corporate Governance

In the main analysis we use an overall index of CG (CG Composite), which is defined as the sum of three sub-indexes of CG: (i) Board Organization, (ii) Board Behavior, and (iii) Ownership, detailed below.<sup>12</sup> CG Composite is used because any one sub-index may not be broad enough to capture the underlying relationship between CG and transparency. An overall index is also consistent with other papers in the area (e.g., Aggarwal *et al.*, 2011; Beekes *et al.*, 2016b).

Appendix Table A1 details the variables (components) we include in each CG sub-index and the basis of a component’s score. Each CG sub-index is created, by firm-year, as follows. First, for each variable that CGES identifies as contributing to a particular CG sub-index, a separate score is provided for that firm in that year. For example, for the absolute number of board members [BRD\_NUM], which is component of Board Organization, the score ranges from ‘1’ (low) to ‘5’ (high). Next, the scores for all variables contributing to a particular CG sub-index are aggregated, using the weights recommended by CGES.<sup>13</sup> Finally, for each sub-index we replace the firms’ weighted average scores with their decile values that year, with a higher score indicating “better” CG.

Board Organization assesses the board’s ability both to monitor managers’ actions and to act in the shareholders’ best interests. According to the CGES rating, a firm with better Board Organization might have for example a board of directors with 10 or fewer members, or at least 15 per cent outside (independent) directors on the board, or an executive officer system.<sup>14</sup> Board Behavior assesses the

<sup>10</sup>The unadjusted announcement period return is used to determine whether the news in any documents that day is good or bad. See Appendix A for details.

<sup>11</sup>Good and bad news is determined relative to market-adjusted returns on an individual share: market-adjusted returns greater than zero are categorized as good news while market-adjusted returns below zero are categorized as bad. Further details are in Appendix A.

<sup>12</sup>For the main analysis, the measure of CG focuses upon the board of directors and share ownership. In sensitivity analysis, we include two additional CG sub-indexes from the CGES: Main Bank (available for 2006 onwards) and Information Disclosure. Main Bank assesses CG quality in terms of the existence and level of the relationship the firm has with main banks (both in terms of firm borrowings and shareholdings). Information Disclosure assesses CG quality in terms of characteristics of disclosures by the firm. Main Bank and Information Disclosure are constructed in a comparable way to the other CG sub-indexes.

<sup>13</sup>CGES documentation discloses the weights but not the reasons for them. We adopt the recommended weights from CGES 2014 in our main analysis and use equal weightings in robustness tests. Although the CGES weights have been amended slightly over time, we employ the 2014 weights for consistency over our sample period. Some CG characteristics are reverse-coded for uniformity, as indicated in Appendix Table A1.

<sup>14</sup>Executive officers may be appointed in any firm irrespective of whether the corporate auditors or committee system is used. An executive officer system separates the roles of executives from other (representative) directors. This clarifies the role of the board of directors, which has a monitoring and supervisory role, and that of the executive officer, who is the primary executive decision-maker. Uchida (2011, p. 562) finds that reductions to board size resulting from the implementation of the executive officer system often did not change “the size of the management team (executive officers

degree of alignment between shareholders' interests and directors' incentives. A firm rated more highly might have directors' share ownership in the top quintile (of the distribution for firms listed in the First Section of the TSE), or stock option plans in which directors may participate. Ownership assesses the makeup of the firm's ownership and the incentives owners have to monitor its activities. A firm rated more highly might have a higher proportion of institutional and foreign share ownership, or lower proportions of dominant company ownership and cross-shareholdings.

### 4.3 Explanatory Variables

The remaining explanatory variables in equation (1) control for firm-specific factors which can affect the firm's disclosure and timeliness. GoodNews controls for the positive association between the firm's performance and its disclosures (Lang & Lundholm, 1993; Lev & Penman, 1990). Size controls for the positive association between the extent of disclosure and firm size (Lang & Lundholm, 1993). Leverage and Volatility control for risk, which may influence investors' disclosure demands (Taylor *et al.*, 2012); for example, creditors and lenders could request additional and more timely information when the firm is riskier. The regressions include fixed effects by Industry to allow for the fact that firms in some sectors (e.g., those that are more research intensive) are likely to be less transparent because their proprietary costs of disclosure are greater (Verrecchia, 1983). Similarly, because the document frequency and returns-based timeliness measures have noticeably higher means in some years, especially around 2008, the regressions include fixed effects by year. Models investigating good news and bad news timeliness exclude the GoodNews control variable.

## 5 Results

### 5.1 Descriptive Statistics and Bivariate Correlations

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Insert Table 1 about here

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Table 1 contains descriptive statistics. The number of documents (Docs) released by a sample firm ranges from 2 to 122 annually. The median number is about 1.2 documents per month, which is substantially less than the median 4.1 documents per month reported in the cross-country study by Beekes *et al.* (2016b) and indicates Japanese firms are less forthcoming with information than firms in other countries. The timeliness of documents (TdocsAll) has a mean (and median) of 0.543, compared with an average of 0.52 (median 0.51) in Beekes *et al.* (2016b). Thus firms in Japan are slower to release price-sensitive documents to the share market. Mean values for the timeliness of document disclosures for good and bad news (TdocsGood and TdocsBad) are comparable to TdocsAll. Fewer and less timely disclosures may have impacted on the timeliness of share prices and the efficiency of the Japanese share market generally, as at any point in time there may be less information in the market place about the firm's prospects and current performance. We say "may" because we do not know the extent to which competing information intermediaries have taken up the slack in corporate disclosures.

The timeliness of prices, (T), ranges between 0.011 and 1.999, and from 0.011 to 0.646 when T is deflated by one plus the share's absolute rate of return (TDef). The average timeliness, T (TDef), in Japan is 0.156 (0.118), compared with 0.19 (0.13) in Beekes *et al.* (2016b); the sample medians indicate similar differences. Apparently, then, the shares of Japanese firms are typically priced in a more timely fashion when compared with a cross-section of more than 20 other countries, which may be unsurprising given the comparative size and level of development of the Japanese share market and its supporting institutions. For the timeliness of good, bad and all news in prices (TGood, TBad and TAll), we find averages of 0.504, 0.505 and 0.504 respectively, which is less than the average of 0.52 reported for all three timeliness measures in Beekes *et al.* (2016b); the sample medians indicate similar differences.<sup>15</sup>

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plus directors)".

<sup>15</sup>Note that T and TDef are unbounded measures of the timeliness of price discovery, whereas TGood, TBad and TAll generally lie between 0 and 1.

Our main analysis focuses upon CG Composite and discussion here is limited to this measure. The mean value of CG Composite is 16.976.<sup>16</sup> Firms' market capitalisation (Size) ranges from ¥781 million to ¥24.4 trillion; leverage averages 51 per cent. About 60% of the observations are for company-years where the individual company out-performed the market (GoodNews mean = 0.610), implying the ratio of share market winners to losers was 3 to 2.

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Insert Table 2 about here

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Bivariate correlations are shown in Table 2. CG Composite is positively correlated with the number of documents disclosed and their logs (Docs and Ldocs) and negatively correlated with measures of their timeliness (not tabulated due to differing sample sizes). These simple correlations indicate better-governed firms do make a greater number of, and more timely, disclosures and point to a complementary relationship between the quality of the firm's CG and its disclosure policies. CG Composite is positively correlated with measures of the timeliness of prices where the correlations are statistically significant. However, the correlations are small (around 0.02), pointing to a quite weak substitution relationship between CG and to a share market in which value-relevant information is incorporated into share prices on a less timely basis for better-governed firms. CG Composite is positively correlated with firm size (Size) and negatively with leverage (Leverage).

## 5.2 CG and the Frequency and Timeliness of Disclosures – Multivariate Analysis

In these tests we use measures of document frequency and document timeliness as dependent variables. The explanatory variables of interest in multivariate tests are: CG Composite (CG), GoodNews, and their interaction GoodNews · CG. The coefficient on CG ( $\beta_1$ ) captures the marginal effect of better CG on the dependent variable; the coefficient on GoodNews ( $\beta_2$ ) captures the marginal effect of good news (relative to bad news) for the year; and the coefficient on the interaction term, GoodNews · CG ( $\beta_3$ ), captures the marginal effect of better CG when the firm has good news for the year. Table 3 shows the results from our regressions. To assist interpretation, the coefficients reported in tables relate to explanatory variables divided by their standard deviations. Estimates of fixed effects are omitted for brevity.

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Insert Table 3 about here

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The regression estimates in columns (1) and (2) of Table 3 show a positive and significant association between Ldocs and CG. This complementary relation between CG and the number of disclosure documents is consistent with previous evidence (BB06; Beekes *et al.*, 2016b), as are the positive coefficients on Size and Leverage. Unexpectedly, the coefficient on GoodNews is negative, implying fewer disclosures when firms have good news (again, in both columns). Column (2) includes the interaction term, GoodNews · CG Composite. Its coefficient is positive and significant indicating that better-governed firms still release more documents than do other firms in years when their news over the whole year is good.

Next we consider whether there is a relation between CG and the timeliness with which price-sensitive documents are released. Recall that smaller values of timeliness reflect more timely (earlier) disclosures. We first focus on the timeliness of all price-sensitive documents, TdocsAll, shown in columns (3) and (4) of Table 3. The coefficient on CG is negative and significant in column (3), implying better-governed firms make more timely disclosures of all news (i.e., a complementary relation between CG and the timeliness of disclosures). This is consistent with the results for code-law countries reported in Beekes *et al.* (2016b). The coefficient on GoodNews is positive and significant, which indicates firms that outperform the market over the full year are less timely in their disclosures of price-sensitive information.

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<sup>16</sup>The services sector has the highest overall CG (CG Composite average=18.8, not tabulated). The construction sector has the lowest overall CG (CG Composite average=13.4).

In column (4) we include the interaction of GoodNews with CG. In this model, the coefficient on CG is negative but very small and statistically insignificant. This implies there is little difference in the timeliness of price-sensitive disclosures between firms with different levels of CG in years when the firms underperform the market. We do, however, observe a negative and significant coefficient on GoodNews · CG Composite. This indicates better-governed firms make more timely disclosures during the year when their shares outperform the market over the full year, compared with firms that are not as well-governed. Larger and more volatile firms are also associated with more timely disclosures but firms with greater leverage are not.

We next report results focussing separately on the timeliness of documents released on days when the firm's share price rose (TdocsGood) and when it fell (TdocsBad). Table 1 indicates little difference in the average timeliness of price-sensitive disclosures between TdocsGood (mean=0.539) and TdocsBad (mean=0.538). For better-governed firms, Table 3 reveals an imbalance in disclosure timeliness: CG has a negative and significant association with TdocsGood (column 5) but it is not significantly different from zero in the TdocsBad model (column 6). This result is consistent with the results in column (4) and with Beekes *et al.* (2016b): relative to poorer-governed firms, better-governed firms make more timely disclosures of good news. Introducing guidance that promotes a greater focus on the interests of outside shareholders has not resulted in equally-timely disclosure of a document regardless of whether it conveyed good or bad news. Perhaps Japanese managers are wary of recognising timely bad news (e.g., losses) because of their social consequences (Ishida & Ito, 2014).<sup>17</sup>

### 5.3 Timeliness of Prices – Multivariate Analysis

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Insert Table 4 about here

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Results for the timeliness of price discovery are reported in Table 4. In columns (1) and (3) we report results using T and TDef as the dependent variables respectively, excluding the interaction of GoodNews and CG. Although the coefficient on CG is not statistically significant in column (1), it is nonetheless positive and of similar size to its value in column (3), where it is statistically significant. This is an interesting finding: firms with better CG are less transparent (i.e., better CG substitutes for a lack of transparency). The coefficient on GoodNews is positive and significant, which implies the firm's shares are priced less efficiently when its share returns exceed the market for that year. When we include the interaction term (GoodNews · CG Composite; see columns 2 and 4 of Table 4), we find its coefficient is negative in column 2 and significantly so in column 4. The implication is that price discovery is more timely for better-governed firms when they outperform the market that year, relative to when they do not. In columns (5) and (6) we report the results for the timeliness of all news in prices (TAll), which is an alternative measure to T and TDef. When we allow for the interaction between GoodNews and CG (column 6), we find the coefficients of interest are in line with those reported earlier for TDef in column (4).

Estimates of the relation between CG and the timeliness of good and bad news in daily price changes are in columns 7 and 8. Table 1 indicates comparable levels of timeliness for good and bad news: the unconditional means are TGood=0.504 and TBad=0.505. However, for better-governed firms, we find evidence of imbalance in the timeliness in prices of good and bad news. The negative and significant coefficient on CG Composite in the TGood model (column 7) indicates good news is reflected more quickly in the share prices of better-governed firms. However, the coefficient on CG Composite is not statistically significant in the TBad model (column 8).

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<sup>17</sup>Cho et al. (2011) find Japanese managers typically have an optimistic bias in their earnings forecasts to avoid forecasting a loss. They attribute this optimism to the earnings forecast being used as a target for managers in Japan and a reluctance to signal financial distress for fear of losing their post.

## 6 Further Results and Robustness Testing

### 6.1 Further Results

The results so far show better CG is accompanied by more corporate disclosure. Also, better-governed firms make more timely disclosures (which are integrated into share prices) when they have good news. The asymmetric focus on good rather than bad news in disclosures from better-governed firms is intriguing and is consistent with a reluctance to disclose bad news due to less effective monitoring of managers, or managerial exuberance. For weaker-governed firms we find fewer, and less timely, disclosures and less timely price movements when the overall news for the year is good. This may mean firms with weaker CG structures are more conservative when disclosing good news.

To provide a more detailed understanding, we repeat our analysis using the CG sub-indexes Board Organization, Board Behavior and Ownership as separate explanatory variables in place of their aggregate, CG Composite.<sup>18</sup> (Results are shown in Appendix Table A2. Panel A relates to the documents and timeliness of documents models and Panel B to the timeliness of prices models.) Board Organization has a complementary relation with disclosure frequency and the timeliness of document release, indicating better quality monitoring by the board of directors results in more transparent disclosure practices. In addition, Board Behavior has a complementary association with disclosure frequency and the timeliness of document disclosures, notably when the news is good. When managers hold more shares or hold stock options, they may use their discretion to accelerate the release of good news. This effect appears to flow into the timeliness of prices: Board Behavior is associated with more timely prices when there is good news (using Tgood). Firms with better Ownership release more documents, consistent with findings in Nagata & Nguyen (2017).<sup>19</sup> However, documents with bad news (TdocsBad) are released on a less timely basis for firms with better Ownership. Despite this, their shares are priced more efficiently for bad news (using TdocsBad). Perhaps the absence of bad news disclosures leads to a decline in share prices anyway on the suspicion that bad news has been withheld?

### 6.2 Robustness Testing

We conducted a range of robustness checks of our primary findings. First, we examine whether choice of the corporate auditor system or the committees system affects transparency. We excluded firms following the committee system (2% of the sample) and re-estimated our results. Because of the very high overlap of the samples our conclusions were unaffected. Next, to control for main bank relationships, we collected additional CGES data for the CG sub-index, Main Bank.<sup>20</sup> Our results were unaffected by the inclusion of Main Bank as a separate explanatory variable or as a component of CG Composite.

We then examined the sensitivity of our results to four differing variable definitions. Our conclusions were unaffected by the following changes: (1) weighting the components equally when calculating the CG sub-indexes; (2) using the measure of CG for the previous year; (3) using a measure of CG which was not re-based annually to allow the CG variables to reflect changes over time; and (4) inclusion of the CGES Information Disclosure sub-index (see Appendix A, Table A1, Panel E), which incorporates an assessment of the firm's reporting lag, as an explanatory variable to control for delay in release of the annual earnings announcement.

We also used the CGES Information Disclosure sub-index, which is an alternative measure of disclosure transparency, as the dependent variable. The results were comparable to those reported in Table 3, column (1). However, the interaction term (CG Composite · GoodNews) was not statistically significant at conventional levels. This result may be due to the broader measure of disclosure used by CGES than Ldocs. In further tests we explored measures of TGood, TBad and TAll that (i) took into account the reporting lag directly and (ii) filtered out small daily returns, such as those reflecting bid-ask bounce, because they are likely to introduce noise into timeliness measures. We found there was less timely price discovery for better-governed firms when their news was bad (TBad).

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<sup>18</sup>All of the correlations are relatively low between the sub-indexes of CG; the highest is between Board Behavior and Ownership, with a correlation coefficient of 0.22 (see Table 2). This would suggest the sub-indexes capture different aspects of CG.

<sup>19</sup>Nagata & Nguyen (2017) find Japanese firms with greater foreign and domestic institutional ownership provide more frequent and timely updates to their management forecasts, suggesting more transparent disclosure practices.

<sup>20</sup>The CGES data for the CG sub-index Main Bank are available from 2006 onwards. Missing data on Main Bank reduced our sample size to N=11,659 for the document count and timeliness of prices models and N=11,603 for the timeliness of documents models. The CGES data shows average main bank ownership and borrowing in sample firms has remained fairly constant throughout our sample period at around 3% and 31%, respectively. See Appendix Table A1, Panel D for further information on Main Bank.

Our results proved robust to several other changes as well: censoring the top and bottom 1 per cent of dependent variables; using Poisson estimation methods for the disclosure frequency models to allow for count dependent variables; confining the sample to the 80% of company-years where the financial year ended in March (to improve temporal alignment); using the log of total assets or of total revenue as the proxy for firm size; and including either research and development expenditure or the price-to-book ratio as an additional explanatory variable to control for a firm’s growth opportunities, which may affect its disclosure practices.

Finally, we investigated the use of instrumental variable (IV) methods to allow for endogeneity in CG. Ideally an instrumental variable is “correlated with the included endogenous variable(s) and orthogonal to the error process” (Baum *et al.*, 2003, p.14). We explored the average value of CG in the industry, and by year, as candidate instruments but statistical tests indicated they were weak and unreliable.<sup>21</sup> As Brown *et al.* (2011, p.108) comment, a weak instrument could result in biased results from IV estimation. For this reason we base our findings on OLS estimates (with clustered standard errors).

## 7 Changes to Japanese Institutional Arrangements since 2013

A number of changes have been made to Japanese institutional arrangements since the end of our sample period in 2013 that could condition the way the reader will view the policy implications of our results. The Japanese Government’s Revitalization Strategy has continued the focus on improving CG (Prime Minister’s Office of Japan, 2014). Two key codes have been introduced. In February 2014, Japan’s Stewardship Code was introduced which aimed to increase the fiduciary responsibilities of institutional investors (The Council of Experts concerning the Japanese version of the Stewardship Code, 2014). This was followed by the TSE’s CG Code, which became effective in June 2015 (TSE, 2015a). It is of note that under the new CG Code firms should appoint *at least two* independent directors (TSE, 2015a, p. 21). These Codes are envisioned as “two wheels of a cart”, aimed at promoting CG and long-term sustainable growth in Japanese companies (JPX, 2020c). Both codes maintain the ‘comply or explain’ approach (i.e., comply with the recommendations or explain the rationale for non-compliance). There have been updates to the codes subsequent to their release.<sup>22</sup>

In 2014 the JPX-Nikkei 400 (JPX400) was launched which includes the top 400 companies that meet “global investment standards” (JPX, 2020d).<sup>23</sup> The index aims to improve corporate value and attract investors to the Japanese market. Scoring for inclusion in the JPX400 is based upon quantitative factors (such as profitability and market value) and qualitative factors (relating to CG and disclosure practices). Membership of JPX400 is perceived as very prestigious (Chattopadhyay *et al.*, 2020). Therefore firms may seek to increase their chances of inclusion in JPX400 by improving CG and disclosure policies, as well as their financial performance. Evidence from Chattopadhyay *et al.* (2020) suggests managers took deliberate action (e.g., reducing research and development expenditure to increase the firm’s Return on Equity) to increase their firm’s chance of inclusion in JPX400. This would suggest reputational effects relating to inclusion in JPX400 can be a strong motivator for Japanese managers.

Changes to the Companies Act in 2015 required firms to explain their board composition if they had no outside directors. Also large, listed companies were given another alternative organization structure, “the company with audit and supervisory committee” (Matsushita, 2019), whose role is to review the actions of directors. The supervisory committee is to comprise at least three directors, a majority being outside directors. Since members of the committee are directors, they can vote at board meetings (statutory auditors do not vote under the corporate auditor system). However, a company with a supervisory committee has no requirement to establish a nomination committee, which may negatively impact on overall CG (Cochran *et al.*, 2016).

There have also been changes to disclosure regulations following the end of our sample period. As mentioned earlier, firms in Japan are obliged to make timely disclosure under the stock exchange regulations. This requirement was reinforced by the introduction of fair disclosure rules in 2018 (Allen *et al.*,

<sup>21</sup>We form this view based on tests for underidentification and weak identification; specifically the Kleibergen-Paap rk LM statistic and the Kleibergen-Paap rk Wald F statistic reported using IVREG2 in STATA (Baum *et al.*, 2002).

<sup>22</sup>The Stewardship Code has been revised twice (in 2017 and 2020) to incorporate greater interaction between investors and companies, and encouraging advisors and consultants to provide support to institutional investors to enhance their role in stewardship (The Council of Experts on the Stewardship Code, 2020). The CG Code was revised in June 2018 (TSE, 2018) to include a new requirement for firms to “disclose their policies regarding the reduction of cross-shareholdings.” (Matsushita, 2019, p. 58)

<sup>23</sup>Firms with main market listing on the TSE First and Second sections, Mothers or the JASDAQ market are eligible for inclusion in the JPX400. For further details about the requirements for inclusion in JPX400, see JPX (2020d).

2018). This was to prevent the selective disclosure of material information (which may influence investment decisions) to a third party prior to the public disclosure of the same information. The amendment to the Financial Instruments and Exchange Act came into force on April 1, 2018. However, the rules are only triggered when the disclosure is made by those officers in the company responsible for information disclosure and the recipient of the information is someone likely to be involved in trading securities (Kuronuma, 2018). This has brought the Japanese market in line with other share markets around the world which have fair disclosure regulations.

How have TSE First Section firms responded to these changes? A 2019 TSE survey shows the vast majority (99.3%) of firms have independent directors and 33.6% of boards of directors comprise a third or more independent directors (TSE, 2019). Many firms have established board committees: 43.1% of firms have a nomination committee and 45.6% have a remuneration committee (TSE, 2019). In addition, 24.4% use the company with supervisory committee system (TSE, 2019).<sup>24</sup> Also, incentive remuneration for directors, which are linked to long-term earnings performance, has become more commonplace (Nikkei Asian Review, 2017a). In July 2018, 32% of TSE First Section firms used stock option plans and 43.5% used performance-linked remuneration (TSE, 2019). CGES data confirms the average percentage of directors' shareholding has increased in recent years, from 4.4% in 2013 to 6.1% in 2019. Despite this, Allen *et al.* (2018, p. 207) are sceptical about the impact of these changes and conclude "board culture and practices remain largely the same in many firms".

Nonetheless, institutional investors are becoming more active, for example, in encouraging firms to reduce their cash balances and to appoint more independent directors (Matsushita, 2019). An amendment to the Stewardship Code in 2017 included additional requirements for institutional investors to disclose their voting records on all proposals, encouraging greater engagement. Minority shareholders are providing further incentives to strengthen CG, with a greater willingness to act against a firm involved in corporate wrong-doing, for example by filing individual law suits against Toshiba (Cochran *et al.*, 2016).

While these developments indicate a continued interest in CG matters in Japan, our results suggest the TSE's earlier attempts to improve CG structures have not been entirely effective in improving disclosure practices. Although the CG structures in place during our sample period may not have been sufficient to overcome managers' reluctance to disclose of bad news, they can be viewed as a springboard for future regulatory change. Time will tell whether more recent changes to CG codes and practices, and a sharper focus on disclosure requirements and transparency, will have their intended effects.

## 8 Conclusions

We examine the association between CG and Japanese firms' transparency to outsiders. We focus on the number and timing of disclosures, which are under the control of insiders, and the speed of share price discovery, which reflects the pricing outcomes of the release of value-relevant information from all sources. Within our 10-year study period, from mid-2003 to mid-2013, the TSE released a set of CG principles which specifically refer to corporate transparency and ensuring "timely and accurate disclosure . . . (of) all material matters" as important governance outcomes (TSE, 2004, p. 11). Also during this time firms' CG structures were evolving towards more shareholder-oriented CG, which may have underscored a perceived need for greater transparency to outside parties.

We use data from CGES, which rates the quality of CG of Japanese firms each year according to a number of criteria. We combine three CG sub-indexes (Board Organization, Board Behavior and Ownership) into an overall composite index. Using this composite index, we find firms with better (more highly rated) CG make more frequent disclosures, consistent with prior research. We also find share price discovery is faster for Japanese firms with better CG, but only when the share market considers their news is good. The more timely release of good relative to bad news to the share market by better-governed firms, and the market's more timely integration of good news into the share prices of those firms, are novel findings. Further analysis suggests that the disclosure practices we have observed relating to good news and its timeliness may have been influenced by board incentives (proxied in this study by Board Behavior). Firms rated more highly on Board Behavior, with good news, release more documents and do so earlier. Consequently, their share prices reflect good news faster. Thus it would appear that when directors have significant wealth invested in the firm, whether through stock options, shareholdings or

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<sup>24</sup>Among TSE First Section firms, the corporate auditors system remains the most popular (72.8%) followed by the company with supervisory committee system (24.4%) and then the least popular, the committee system (2.9%) (TSE, 2019). Firms' responses to the option to choose the supervisory committee system have been criticized as a "quick fix" to the need for two independent directors under the CG code because corporate auditors may be reassigned as outside directors on the new supervisory committee (Nikkei Asian Review, 2017b).

human capital, there is still evidence of a preference for more frequent and earlier disclosure of good news rather than the balanced disclosure of all news regardless of whether it is good or bad.

Finally, the move to adopt CG structures that promote greater transparency has been only partially effective. Thus, when market providers or regulators are developing future guidelines there may be benefit in giving even greater attention to earlier disclosure of bad news. It is of course an open question whether two new codes introduced since the end of our sample period, namely the Stewardship Code and the CG Code, have improved disclosure behavior and the efficiency of share prices to a level that meets community expectations in Japan.

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Table 1: Descriptive Statistics

Variables	N	Mean	Median	Std. Dev.	Min.	Max.
Docs	14,116	16.440	14	8.516	2	122
Ldocs	14,116	2.764	2.708	0.423	1.099	4.812
TdocsAll	13,561	0.543	0.543	0.110	0.129	0.964
TdocsGood	13,561	0.539	0.538	0.164	0.007	0.999
TdocsBad	13,561	0.538	0.535	0.160	0.004	0.999
T	14,116	0.156	0.121	0.125	0.011	1.999
TDef	14,116	0.118	0.102	0.070	0.011	0.646
TGood	14,116	0.504	0.503	0.051	0.275	0.772
TBad	14,116	0.505	0.504	0.042	0.338	0.732
TAll	14,116	0.504	0.503	0.041	0.348	0.700
CG Composite	14,116	16.976	17	5.494	3	30
Board Org.	14,116	5.045	5	3.070	1	10
Board Behav.	14,116	4.828	5	2.821	1	10
Ownership	14,116	7.103	8	2.585	1	10
Size(¥m)	14,116	215,859	42,173	731,059	781	24,400,000
Leverage(%)	14,116	51.376	52.075	20.397	1.540	219.550
Volatility Docs	14,116	0.019	0.017	0.010	0.003	0.130
Volatility Prices	14,116	0.017	0.015	0.007	0.004	0.137
GoodNews	14,116	0.610			0	1

Docs is the number of documents filed by the company with the Tokyo Stock Exchange over the year. Ldocs is the natural logarithm of (1+Docs). TdocsAll is the timeliness of documents weighted by the sizes of the share returns associated with the documents' release. TdocsGood (TdocsBad) is the timeliness of documents when there is good (bad) news weighted by share returns at the time of the release; news associated with a document release is classified as good or bad dependent upon the unadjusted return for that particular document-day; a price rise is classified as 'good news' and a price decline is classified as 'bad news'. T is the timeliness metric for share prices and is calculated as the average over 365 days of the absolute difference between the log of market-adjusted daily share price and its counterpart 14 days after the release of the firm's financial results for the year. TDef is T divided by one plus the absolute value of the market-adjusted rate of return over the 365 days for which T is measured. TGood is the timeliness of prices on days when the share price rose relative to the market index and TBad is the timeliness of prices when it fell. TAll is the timeliness of all price movements, i.e., taking both negative and positive market-adjusted daily returns into account. CG Composite is a measure of overall firm-level corporate governance quality as assessed by CGES. Board Organization, Board Behavior and Ownership are measures of three sub-indexes of corporate governance quality as assessed by CGES; CG Composite is an equal-weighted sum of the three sub-indexes of corporate governance. Size is the market value of equity (in ¥million) at the end of the previous financial year. Leverage is the firm's leverage defined as total liabilities divided by total assets, also measured at the end of the previous financial year. Volatility Docs is the standard deviation of daily log returns over the 90 day period ending the day before the start of the period over which Docs is measured. Volatility Prices is the standard deviation of daily market-adjusted log returns over the period for which T is measured. GoodNews is a dummy variable equal to one when the firm's share price outperforms the market index over the year and zero otherwise.

Table 2: Bivariate Correlations (N=14,116)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Docs															
2 Ldocs	0.94*														
3 T	0.08*	0.08*													
4 TDef	0.08*	0.08*	0.94*												
5 TGood	0.02	0.02*	0.28*	0.31*											
6 TBad	0.00	0.00	0.17*	0.17*	0.51*										
7 TAll	0.01	0.01	0.28*	0.31*	0.90*	0.84*									
8 CG Composite	0.28*	0.28*	0.02*	0.02*	-0.01	0.01	-0.00								
9 Board Org.	0.18*	0.18*	0.05*	0.05*	0.01	0.01	0.01	0.65*							
10 Board Behav.	0.19*	0.19*	0.00	-0.01	-0.03*	0.02*	-0.01	0.66*	0.08*						
11 Ownership	0.17*	0.18*	-0.01	-0.00	-0.01	-0.02*	-0.02*	0.64*	0.09*	0.22*					
12 Size	0.23*	0.23*	-0.11*	-0.12*	-0.02*	-0.01	-0.02*	0.30*	-0.01	0.12*	0.53*				
13 Leverage	0.08*	0.07*	0.15*	0.15*	0.03*	-0.01	0.02	-0.24*	-0.04*	-0.31*	-0.12*	0.05*			
14 Vola. Docs	0.01	-0.01	0.22*	0.22*	-0.15*	-0.21*	-0.20*	-0.02*	0.07*	-0.12*	-0.00	-0.21*	0.22*		
15 Vola. Prices	0.10*	0.08*	0.57*	0.55*	0.12*	0.08*	0.12*	-0.01	0.10*	-0.09*	-0.03*	-0.28*	0.24*	0.51*	
16 GoodNews	-0.01	-0.01	0.16*	0.15*	0.09*	0.11*	0.11*	0.04*	-0.02	0.03*	0.06*	0.09*	0.00	0.09*	0.19*

The correlation matrix above excludes the variables TdocsAll, TdocsGood and TdocsBad as they are based upon a different sample (N=13,561) due to missing data. Size in this and subsequent tables is defined as the log of the size variable in Table 1; all other variables are as previously defined. \* indicates correlations are significant at the 5% level or better (two-tailed test).

Table 3: Relationship between Corporate Governance, and the Frequency and Timeliness of Disclosures

Dependent Variable: Column No:	Ldocs (1)	Ldocs (2)	TdocsAll (3)	TdocsAll (4)	TdocsGood (5)	TdocsBad (6)
CG Composite	0.0958*** [13.87]	0.0883*** [11.26]	-0.0033*** [-2.84]	-0.0002 [-0.15]	-0.0040** [-2.33]	-0.0011 [-0.65]
GoodNews	-0.0232*** [-3.33]	-0.0232*** [-3.34]	0.0097*** [4.99]	0.0097*** [5.02]		
GoodNews • CG Composite		0.0125** [ 1.96]		-0.0051*** [-2.80]		
Size	0.0838*** [10.26]	0.0836*** [10.25]	-0.0096*** [-8.14]	-0.0096*** [-8.08]	-0.0060*** [-3.55]	-0.0110*** [-6.98]
Leverage	0.0606*** [8.31]	0.0606*** [8.31]	0.0061*** [5.28]	0.0061*** [5.29]	0.0081*** [4.78]	0.0037** [2.41]
Volatility Docs	0.0142** [2.46]	0.0144** [2.49]	-0.0063*** [-4.85]	-0.0064*** [-4.90]	-0.0104*** [-5.85]	-0.0021 [-1.26]
F-test	86.38***	83.10***	55.32***	53.65***	29.97***	27.79***
Adj. R2	0.220	0.220	0.081	0.082	0.048	0.039
Year & Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
N	14,116	14,116	13,561	13,561	13,561	13,561

Continuous explanatory variables are scaled by their standard deviations. The sample comprises firms listed on the First Section of the Tokyo Stock Exchange and contained in the CGES database with financial years ending between 1 August 2003 and 31 July 2013. Results are estimated using pooled cross-section and time-series regression fitted by OLS regression methods with standard errors clustered by firm and robust to the presence of heteroscedasticity. t-statistics are shown in parentheses.

Table 4: Relationship between Corporate Governance and the Timeliness of Price Discovery

Dependent Variable: Column No:	T (1)	T (2)	TDef (3)	TDef (4)	TAll (5)	TAll (6)	TGood (7)	TBad (8)
CG Composite	0.0015 [1.31]	0.0029** [1.96]	0.0013** [2.05]	0.0025*** [3.10]	-0.0002 [-0.67]	0.0015*** [3.11]	-0.0009** [-2.21]	0.0002 [0.59]
GoodNews	0.0183*** [10.26]	0.0183*** [10.29]	0.0099*** [9.30]	0.0100*** [9.33]	0.0088*** [13.41]	0.0088*** [13.58]		
GoodNews • CG Composite		-0.0023 [-1.33]		-0.0021** [-2.11]		-0.0028*** [-4.73]		
Size	0.004*** [3.15]	0.0036*** [3.16]	0.001 [1.33]	0.0009 [1.34]	-0.001** [-2.40]	-0.0007** [-2.38]	0.000 [1.09]	-0.000 [-0.65]
Leverage	0.0026** [2.12]	0.0026** [2.14]	0.0027*** [3.64]	0.0027*** [3.67]	0.0007** [2.20]	0.0007** [2.28]	0.0011** [2.53]	-0.0002 [-0.58]
Volatility Prices	0.0699*** [26.05]	0.0698*** [26.02]	0.0360*** [23.54]	0.0360*** [23.49]	0.0021*** [4.31]	0.0019*** [4.07]	0.0040*** [6.19]	0.0018*** [4.15]
F-test	106.37***	102.96***	133.17***	130.06***	221.23***	211.50***	121.33***	269.47***
Adj. R2	0.345	0.345	0.332	0.332	0.293	0.294	0.184	0.288
Year & Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	14,116	14,116	14,116	14,116	14,116	14,116	14,116	14,116

Continuous explanatory variables are divided by their standard deviations to assist interpretation. The sample comprises firms listed on the First Section of the Tokyo Stock Exchange and contained in the CGES database with financial years ending between 1 August 2003 and 31 July 2013. Results are estimated using pooled cross section and time series regression fitted by Ordinary Least Squares regression methods with standard errors robust to the presence of heteroscedasticity. All standard errors are clustered by firm. Variables are as previously defined. t-statistics are shown in parentheses. \* p<0.1; \*\* p<0.05; \*\*\* p<0.01 (two-tailed t-test).

## Appendix A: Measures of Transparency

This appendix details how the measures of transparency, which are based on Beekes & Brown (2007) and Beekes *et al.* (2016b), are operationalised.

### A. *Timeliness of Documents* (TdocsAll, TdocsGood, TdocsBad)

The document timeliness variables measure the “timeliness” of price-sensitive (i.e., material) documents: how quickly value-relevant information is released to the stock exchange through the year. There are three measures of document timeliness used in the study: one for all documents (TdocsAll) and separate ones relating to the release of good and bad news documents (TdocsGood and TdocsBad, respectively). All measures relating to documents are calculated over 365 calendar days ending on the firm’s annual earnings release date, denoted as day 0.

To measure TdocsAll, first we identify days in the year on which at least one document was released to the TSE. Next, for each of these “document-days”, we calculate the share’s unadjusted log return,  $r_t$ , over the announcement period. The announcement period is defined as the day of the document release plus the following trading day (to match documents released after market closing time with their price effects on the first available trading day). We assign a zero return to other days in the year when no documents are released. Next, we construct a cumulative time series of returns,  $CD_t^A$ , for the 365 days ending on day 0, as follows:  $CD_t^A = CD_{t-1}^A + |r_t|$  (the initial value of the time series,  $CD_{-365}^A$ , is set to zero.) TdocsAll is calculated from this time-series, as in equation (A1):

$$\text{TdocsAll} = \left( \left( \sum_{t=-365}^{-1} (CD_0^A - CD_t^A) / CD_0^A \right) - 0.5 \right) / 365 \quad (\text{A1})$$

The constant,  $-0.5/365$ , is an adjustment to center the flow of documents over the course of the day. Smaller values of TdocsAll are associated with earlier (i.e., more timely) releases of value-relevant documents to the TSE. The intuition behind this measure is that firms which release value-relevant documents to the TSE earlier in the year are more transparent.

We measure the timeliness of the release of good and bad news documents separately. To do this, we classify each document released as good or bad news based upon the sign of the share’s unadjusted log return in its announcement period. We then construct two time series of returns. The first time series is based on good news releases, i.e., where a document’s announcement period return is positive ( $r_t > 0$ ). The second time series is confined to bad news, i.e., where the announcement period return is negative.

To measure the timeliness of good news documents, TdocsGood, we construct a cumulative time series of the unadjusted log returns associated with all good news announcements:  $CD_t^G = CD_{t-1}^G + r_t$  from day  $-365$  to day 0,  $r_t > 0$  (otherwise  $r_t = 0$ ). The initial value in the time series,  $CD_{-365}^G$ , is set to zero. TdocsGood is then calculated from this time series, as in equation (A2):

$$\text{TdocsGood} = \left( \left( \sum_{t=-365}^{-1} (CD_0^G - CD_t^G) / CD_0^G \right) - 0.5 \right) / 365 \quad (\text{A2})$$

We use the same procedure to measure the timeliness of bad news documents, TdocsBad, i.e., where the announcement period return is negative. Smaller values of TdocsGood and TdocsBad indicate earlier (more timely) release of documents that are judged by the market to be good and bad news respectively.

### B. *Timeliness of Prices* (T, TDef, TAll, TGood, TBad)

For the timeliness of prices measures, we use a 365 day period ending 14 calendar days after the annual earnings announcement, which is expected to be enough time for prices to settle after the announcement. The first metric, T, is an overall measure of the timeliness of prices (BB06). T tracks prices over the year and focuses upon pricing outcomes. It is measured as in equation (A3):

$$\text{T} = \left( \left( \sum_{t=-365}^{-1} |\log(P_0) - \log(P_t)| - 0.5 \right) / 365 \right) \quad (\text{A3})$$

where  $P_t$  is the daily market-adjusted share price.

BB06 acknowledged that T may be biased by idiosyncratic share price volatility and proposed a “deflated” alternative, TDef. We also use Timeliness Deflated, TDef, as an alternative measure of overall timeliness. TDef is defined as T deflated by one plus the absolute log return over the period for which timeliness is calculated.

In addition, we calculate measures of the timeliness of price discovery for good and bad news separately (TGood and TBad). To calculate TGood we first create a market-adjusted daily log return series  $(r_t^*, t = s, \dots, 0)$ , where  $s$  is the starting day of the series (when timeliness is calculated from returns,  $s = -364$  for the annual timeliness measure). Then a time-series of cumulative good news returns is created,  $C_t^G$ , by setting  $C_{-365}^G = 0$  and then cumulating the daily market-adjusted log return series  $C_t^G = C_{t-1}^G + r_t^G$  from day -364 to day 0, where  $r_t^G = r_t^*$  if  $r_t^* > 0$  and  $r_t^G = 0$  otherwise. TGood is then calculated from this time-series as in equation (A4):

$$\text{TGood} = ((\sum_{t=-365}^{-1} (C_0^G - C_t^G)/C_0^G) - 0.5)/365 \quad (\text{A4})$$

The same method is used to calculate the timeliness of bad news (TBad) from the time-series of negative returns.

We also calculate a measure of the timeliness of prices taking into account both good and bad news, which we label TAll. TAll is the weighted sum of TGood and TBad where the weights sum to one, and are  $(C_0^G/[C_0^G + C_0^B])$  and  $(C_0^B/[C_0^G + C_0^B])$  respectively.  $C_0^G$  and  $C_0^B$  are the unsigned good and bad news cumulative values at the end of day 0. As before, smaller values of TGood, TBad and TAll indicate more timely price discovery.

Appendix Table A1: Scoring of Corporate Governance Quality in the Corporate Governance Evaluation System

Panel A: Board Organization				
Variable	Name	Variable Definition	CGES SCORE = 1	CGES SCORE = 5
1	BRD_NUM	Number of board members	BRD_NUM > 25	BRD_NUM ≤ 10
2	EBRD_NUM*	Number of board members (firm size adjusted): BRD_NUM/ln(Total Assets)	EBRD_NUM in bottom quintile (for all TSE First Section firms that year)	EBRD_NUM in top quintile
3	J_NUM	Number of board members at the upper level (e.g., president, vice president, senior managing director)	J_NUM ≥ 15	J_NUM ≤ 5
4	EJ_NUM*	Number of board members at the upper level (firm size adjusted): J_NUM/ln(Total Assets)	EJ_NUM in bottom quintile	EJ_NUM in top quintile
5	IDORTO	Percentage of outside directors without job experience in a bank, controlling company, affiliated company and/or main bank	IDORTO = 0	IDORTO ≥ 15%
6	NEIDRTO <sup>#</sup>	Percentage of non-executive outside directors	N/A	NEIDRTO > 10%
7	NEIDRTO_ADJ <sup>#</sup>	Percentage of outside directors who do not hold an executive position	N/A	NEIDRTO_ADJ > 10%
8	FLG_OPROS <sup>#</sup>	Indicator variable for the adoption of an Executive Officer System	N/A	FLG_OPROS = 1
9	EXERTO <sup>#</sup>	Percentage of directors holding an executive officer position	N/A	EXERTO ≤ 50%
10	EXERTO_ADJ <sup>#</sup>	Percentage of directors holding an executive officer position or involved in the execution of duties	N/A	EXERTO_ADJ ≤ 50%
11	FLG_COMM <sup>#</sup>	Indicator variable for the adoption of Board committees (Audit, Nomination and Compensation)	N/A	FLG_COMM = 1

(Appendix Table A1 continued)

Panel B: Board Behavior				
Variable	Name	Variable Definition	CGES SCORE = 1	CGES SCORE = 5
1	DIR	Percentage of shareholdings held by directors	DIR in bottom quintile	DIR in top quintile
2	OWN	Average market value of shareholdings owned by directors	OWN in bottom quintile	OWN in top quintile
3	SO#	Indicator variable for the adoption of a stock option plan	N/A	SO = 1
Panel C: Ownership				
Variable	Name	Variable Definition	CGES SCORE = 1	CGES SCORE = 5
1	INST	Percentage of shares held by institutional shareholders	INST in bottom quintile	INST in top quintile
2	FRGN	Percentage of shares held by foreign shareholders	FRGN in bottom quintile	FRGN in top quintile
3	FRFLT*	Percentage of shares held by shareholders with holdings of less than 50 shares	FRFLT in bottom quintile	FRFLT in top quintile
4	NFLOAT*	Percentage of shares held by specific shareholders	NFLOAT in bottom quintile	NFLOAT in top quintile
5	DOMI <sup>§</sup>	Percentage of shares held by dominant companies	DOMI > 30%	N/A
6	CROSS*	Percentage of shares held by domestic companies with cross-shareholding relations	CROSS in bottom quintile	CROSS in top quintile
7	ANTEI*	Percentage of shares held by stable shareholders	ANTEI in bottom quintile	ANTEI in top quintile

(Appendix Table A1 continued)

Panel D: Main Bank				
Variable	Name	Variable Definition	CGES SCORE = 1	CGES SCORE = 5
1	RTO_TPBK*	Percentage of main bank share ownership	RTO_TPBK in bottom quintile	RTO_TPBK in top quintile
2	RTO_TPBK_D*	Percentage of borrowing from a main bank	RTO_TPBK_D in bottom quintile	RTO_TPBK_D in top quintile
3	RTO_TPBK2*	Percentage of main bank ownership from the largest lending bank	RTO_TPBK2 in bottom quintile	RTO_TPBK2 in top quintile
4	RTO_TPBK2_D*	Percentage of main bank lending from the largest lending bank	RTO_TPBK2_D in bottom quintile	RTO_TPBK2_D in top quintile
Panel E: Information Disclosure				
Variable	Name	Variable Definition	CGES SCORE = 1	CGES SCORE = 5
1	MISFRC	Average of last three years management forecast errors (defined as the absolute value of the difference between actual earnings and the initial management forecast of earnings, divided by actual sales for the year)	MISFRC in top quintile	MISFRC in bottom quintile
2	AOP3 <sup>+</sup>	Number of qualified audit opinions over the last three years	AOP3 = 3	N/A
3	APCHG3 <sup>+</sup>	Number of accounting policy changes over the last three years	Changes to accounting policies in each of the last three years	N/A
4	ATRM	Number of days from the end of the accounting period to the date of the announcement of earnings	ATRM > 50	ATRM ≤ 20
5	AGMC	Number of firms that held their annual shareholders meeting on the same date as this firm	Firm holds annual shareholders meeting on the most concentrated date	AGMC in bottom quartile of distribution of AGMC
6	FLG_CFP <sup>§</sup>	Indicator variable for the release of a management forecast	FLG_CFP = 0	N/A
7	WEBEVL	Evaluation of the company website based upon ease of understanding, use and information quantity	WEBEVL in bottom quintile	WEBEVL in top quintile

Note to Appendix Table A1:

Table A1 shows how corporate governance is scored in CGES. The data included in this table are sourced from the variable definitions accompanying the annual CGES data from Nikkei Media Digital Inc. A score is assigned separately for each variable, and then combined into a sub-index of CG Quality (Board Organization, Board Behavior, Ownership, Main Bank and Information Disclosure) using the weightings provided by CGES (weightings not tabulated). Board Organization comprises 11 CGES variables (Panel A). We replace the CGES variable IDRTO, defined as the percentage of outside directors including affiliated and independent outside directors, with IDORTO (as suggested in the CGES documentation). Board Behavior comprises 3 CGES variables (Panel B). We drop 6 CGES variables that either relate to performance or are outcome variables. They are: TNEED, which reflects the relation between performance (either Tobin's Q or Return on Assets) and representative director turnover; OVBNS, an indicator variable equal to 1 if bonuses awarded to directors exceeds the sum of the firm's income after tax and dividends; and RTRN3\_PS, RTRN5\_PS, ERTRN3\_PS, and ERTRN5\_PS, all of which reflect stock returns (either unadjusted, or adjusted by industry and scale) for up to five years preceding the turnover of a representative director. Ownership (Panel C) comprises 7 CGES variables. We drop the CGES variable ENT, defined as the degree of owner management, as this uses directors' ownership as a proxy for family ownership of the firm. Main Bank comprises 4 CGES definitions (Panel D); we keep all 4. Information Disclosure comprises 7 CGES variables (Panel E). We exclude WEBEVL3, defined as information quantity, as this variable is already included in WEBEVL, which is a measure of the quality of disclosure on a firm's website. It has 3 components: WEBWVL1, ease of understanding; WEBEVL2, ease of use; and WEBEVL3, amount of information. Note that \* indicates the variable is reverse-coded to ensure all scores are increasing in CGES quality; # indicates the minimum score in CGES is 3; § indicates the maximum score in CGES is 4; and + indicates the maximum score in CGES is 4. Adjustments to the minimum and maximum scores allow for the fact that some specific corporate governance characteristics may not apply to the particular CG system adopted by the firm.

Appendix Table A2: Marginal Influence on Transparency of  
Three Components of Corporate Governance

Panel A: Documents and Timeliness of Documents						
Dependent Variable:	Ldocs	Ldocs	TdocsAll	TdocsAll	TdocsGood	TdocsBad
Column No:	(1)	(2)	(3)	(4)	(5)	(6)
Board Organization	0.0633*** [10.58 ]	0.0660*** [9.15 ]	-0.0021** [-2.03 ]	-0.002 [-1.30 ]	-0.0010 [-0.68 ]	-0.0011 [-0.74 ]
Board Behavior	0.0624*** [8.38 ]	0.0535*** [6.23 ]	-0.0044*** [-3.74 ]	-0.0019 [-1.14]	-0.0061*** [-3.52]	-0.0037** [-2.35]
Ownership	0.0158*** [2.28]	0.0116 [1.48]	0.0021 [1.62]	0.0039** [2.34]	0.0012 [0.66]	0.0039** [2.18]
GoodNews	-0.0237*** [-3.40]	-0.0234*** [-3.36]	0.0099*** [5.07]	0.0098*** [5.06]		
GoodNews • Board Organization		-0.0044 [-0.69]		-0.0003 [-0.15]		
GoodNews • Board Behavior		0.0150** [2.16]		-0.0043** [-2.37]		
GoodNews • Ownership		0.0072 [1.15]		-0.0032* [-1.65]		
F-test	80.32***	72.35***	52.23***	47.61***	28.11***	26.11***
Adj. R2	0.223	0.224	0.082	0.083	0.048	0.039
Year & Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
N	14,116	14,116	13,561	13,561	13,561	13,561

(Appendix Table A2 continued)

Panel B: Timeliness of Prices								
Dependent Variable:	T	T	TDef	TDef	TAll	TAll	TGood	TBad
Column No.:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Board Organization	-0.001 [-1.09]	-0.0002 [-0.15]	-0.0002 [-0.42]	0.0002 [0.30]	0.0002 [0.94]	0.0005 [1.09]	0.0000 [0.03]	0.0001 [0.48]
Board Behavior	0.0071*** [6.29]	0.0083*** [5.89]	0.0026*** [4.22]	0.0040*** [5.21]	-0.0002 [-0.54]	-0.0002 [-0.35]	-0.0011** [-2.57]	0.0010*** [3.04]
Ownership	-0.0043*** [-3.62]	-0.0042*** [-3.13]	-0.0004 [-0.62]	-0.0004 [-0.56]	-0.0005 [-1.51]	0.0019*** [3.73]	-0.0005 [-0.96]	-0.0010*** [-2.71]
GoodNews	0.0176*** [9.89]	0.0176*** [9.91]	0.0097*** [9.10]	0.0097*** [9.11]	0.0088*** [13.41]	0.0088*** [13.62]		
GoodNews • Board Organization		-0.0013 [-0.78]		-0.0007 [-0.76]		-0.0003 [-0.59]		
GoodNews • Board Behavior		-0.0019 [-1.03]		-0.0024** [-2.33]		0.000 [0.07]		
GoodNews • Ownership		-0.0001 [-0.08]		0.0001 [0.10]		-0.0041*** [-6.71]		
F-test	99.31***	90.44***	123.83***	113.72***	205.51***	183.21***	112.30***	248.88***
Adj. R2	0.347	0.347	0.333	0.333	0.293	0.295	0.184	0.289
Year & Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	14,116	14,116	14,116	14,116	14,116	14,116	14,116	14,116

Continuous explanatory variables are divided by their standard deviations to assist interpretation. Coefficients and t-values for control variables have been omitted from the table in the interests of brevity. The sample comprises firms listed on the First Section of the Tokyo Stock Exchange and contained in the CGES database with financial years ending between 1 August 2003 and 31 July 2013. Results are estimated using pooled cross section and time series regression fitted by Ordinary Least Squares regression methods with standard errors robust to the presence of heteroscedasticity. Standard errors are clustered by firm. In the interests of brevity, only the coefficients for the corporate governance variables, GoodNews, plus interaction terms between corporate governance and GoodNews from our results are tabulated. Variables as previously defined. t-statistics are shown in parentheses. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$  (two-tailed t-test).

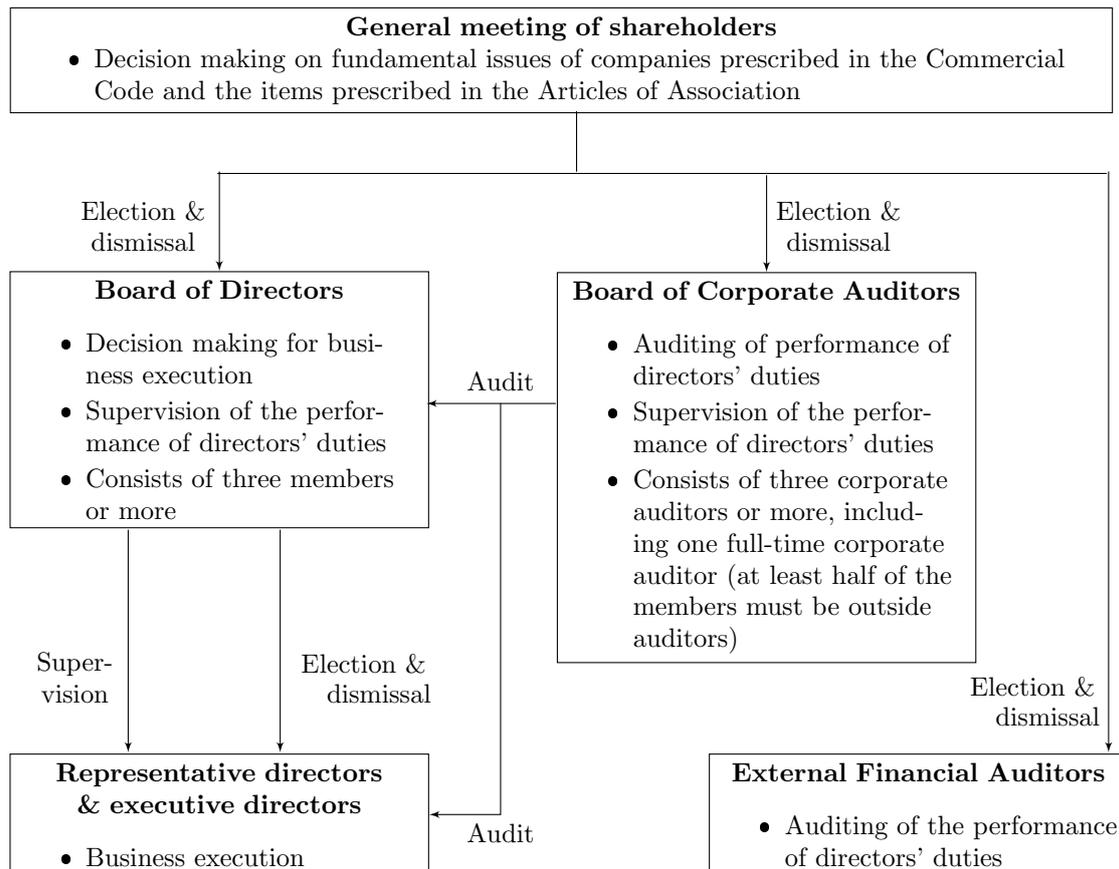
## APPENDIX B

### Two Different Mechanisms for Corporate Governance in Japan<sup>25</sup>

#### 1. Company with a board of corporate auditors (corporate auditors system)

##### Key Features of the Company with the Corporate Auditors System

- The terms of office for directors and corporate auditors are two years and four years, respectively.
- Corporate auditors are not allowed to additionally assume the positions of directors or employees of the company or any of its subsidiaries.
- Outside auditors are limited to those who are not, and were not directors or employees of the company or any of its subsidiaries.
- Corporate auditors must attend the meetings of the board of directors and express their opinions as the occasion demands.
- When a director intends to submit an agenda concerning the election of any corporate auditor, that director must obtain the consent on such submission from the board of corporate auditors.
- At the general meetings of shareholders, corporate auditors may express opinions on the election or discharge of any corporate auditor.
- When a director intends to submit an agenda concerning the election or discharge of any external financial auditor, that such director must obtain the consent of such submission from the board of corporate auditors.



<sup>25</sup>The Company with Three Committees system was introduced in 2003 following changes to the Commercial Code (Source: TSE, 2004, pp. 16-18).

## 2. Company with Three Committees System

### **Key Features of the Company with the Three Committees System**

- The terms of office for directors and executive officers shall be one year. (Unlike companies with a corporate auditors system, companies that have a committees system must annually entrust directors through the general meetings of shareholders since the authority of the definitive plan of profit is given to the board of directors instead of to the shareholders in general meeting.)
- Directors are not allowed to execute the business of the company. (However, directors can be executive officers.)
- Members of the Nomination Committee, Audit Committee and Compensation Committee are elected by the Board of Directors.
- Outside directors are directors who are not executive officers of the company, were not executive directors or executive officers of the company or of any of its subsidiaries in the past, and currently are not executive directors or executive officers of any of its subsidiaries nor employees of the company or of any of its subsidiaries.

(see next page for diagram)

**(Company with Three Committees System, continued)**

