Corporate Governance and Transparency in Japan

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Abstract

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Research Question/Issue: Are better-governed, listed Japanese companies more transparent to their shareholders? The answer is especially important to Japan given its cultural traditions and the trend towards a more market-oriented economy, where openness and transparency are valued.

Research Findings: Better-governed Japanese companies are indeed more transparent in that: 1) they make more frequent disclosures to the share market, and their disclosures of good news are more timely; 2) they enjoy a greater analyst following, although the analysts tend to be more optimistic, less accurate and agree more about their earnings forecasts; and 3) their share prices reflect good news faster.

Thematic/Academic Implications: Theoretically, strong corporate governance can protect the interests of shareholders through closer monitoring of executives' behaviour and by promoting greater transparency. In practice, we find better governance structures have been only partially effective in increasing transparency in Japan. For the time being we beg the question, "Why is this so?"

Practitioner/Policy Implications: Insights are offered to policy makers considering further changes to governance requirements. Many Japanese firms have already made changes that are more in line with recommended best practice, for example by reducing their board size or appointing independent directors. Nonetheless, although better-governed firms have tended to make timelier disclosures when there is good news, we did not detect a comparable effect for bad news. In Western countries, withholding bad news is a common target of regulatory intervention.

INTRODUCTION

Corporate governance (CG) structures in place, whether within or external to the firm, can play a key role in resolving agency problems endemic to the corporate form. One commonly held view, often expressed in codes of best practice, is that better-governed firms are more transparent to outside parties because of closer monitoring of their managers and disclosures that are more informative. Typifying this view, the Organisation for Economic Co-operation and Development (OECD) CG principles state the "CG framework should ensure that timely and accurate disclosure is made on all material matters regarding the corporation, including the financial situation, performance, ownership, and governance of the company" (OECD, 2004:22). We would thus expect firms with better CG to be more transparent.

Japan is a particularly interesting setting because it is an Asian country, it has a mature economy and it has one of the largest equity markets in the world. For historical reasons large cross-shareholdings between firms are still observed while many company directors, having been promoted from within the organisation, lack independence from management, retain a strong personal commitment to the firm, and take a long term view of investment (Cooke and Sawa, 1998). But the CG of Japanese firms has been moving away from the traditional bank (or Keiretsu) centred structure to a more external market-oriented system, where corporate transparency is valued. Changes to CG structures have resulted in smaller boards (Uchida, 2011) and the appointment of outside directors. These changes have been encouraged by greater foreign share ownership and a statement of CG principles issued by the Tokyo Stock Exchange (TSE) (Jacoby, 2007).

Although there have been earlier studies of CG and aspects of corporate transparency in other countries including Australia (Beekes and Brown, 2006, hereafter BB06, Beekes et al., 2015), Canada (Beekes et al., 2012), China (Hass et al., 2014) and Malaysia (Lim et al.,

2014), as well as a pooled cross-country study (Beekes et al., 2016), there is no direct and detailed evidence on the link between governance and transparency in a mature, non-Western economy such as Japan. This is an important gap as Japanese firms continue to adopt CG practices (such as the appointment of outside directors) which elsewhere have been perceived as improving CG quality.

Our study addresses this gap by focusing on the association between 'better' governance and the degree of equity market transparency. First, we investigate the frequency and timeliness of corporate disclosures, which are indicators of market transparency because they reflect the policies and practices of the firm's managers with respect to the supply of inside information to outside parties. Second, we look at transparency from the perspective of financial intermediaries and assess the extent to which differences in the level of bias, accuracy and dispersion of financial analysts' earnings forecasts, and in the number of analysts following a stock, are related to the firm's CG. Our third set of tests focuses on the speed of stock price discovery over the 12 months leading up to the announcement of the firm's earnings for the year. We do this because, ultimately, the degree of a particular firm's transparency will be revealed in the decisions of corporate insiders, market traders and investors who buy and sell its shares.

We contribute to a growing literature on CG and disclosure in several ways. First, our study is extensive, covering over 1,300 Japanese companies with financial years ending between 1 August 2003 and 31 July 2014. During this period share ownership has changed, with fewer cross-shareholdings (Miyajima and Kuroki, 2007) and increased foreign ownership (Yoshikawa and McGuire, 2008). Improvements to CG and transparency have received greater regulatory attention: the TSE released CG principles in 2004 (updated in 2009 and 2015) and from 2009, listed companies have been required to appoint at least one independent director or statutory auditor (TSE, 2009b). Also Japanese firms can choose their

CG structure: either the 'Western' style Committees system or the traditional Board of Corporate Auditors system. With regard to disclosure, greater requirements along with penalties for inadequate disclosure were introduced under the 2007 Financial Instruments and Exchange Act. Second, we refine the research methods used in prior work (BB06, Beekes et al., 2012, 2015, 2016) by expanding the models that are fitted, and enhancing the measurement of variables (e.g. to incorporate issues such as lags in reporting financial results). Third, we use a local rating system developed by Nikkei Media Digital Inc. to evaluate overall CG. It takes into account specific arrangements such as cross-shareholdings and bank ownership as well as attributes commonly used in prior work such as the proportion of outside directors. Finally, while there have been studies examining the link between CG and performance in Japan (e.g. Aman and Nguyen, 2008; Bauer et al., 2008), the link between CG and disclosure remains largely unexplored.

Our empirical findings can be summarized as follows. First, better-governance is associated with more frequent and timelier corporate disclosures, particularly if the price of the stock rises when the disclosure is made. More frequent and timelier disclosures are consistent with expectations and with cross-country evidence in Beekes et al. (2016). Second, we find better governed firms attract a greater analyst following; but while the analysts' earnings forecasts are more concentrated around the mean, they do tend to be more optimistic and less accurate. In contrast, an earlier Australian study reports better governance is associated with less optimistic and more accurate analyst forecasts (BB06). The differences might be due to unfamiliarity among analysts with the influence of changing governance structures in Japan on the nature and credibility of information made available to outside parties. Third, regarding the timeliness of price discovery, price adjustment is significantly faster for better-governed firms on days when the news is good in the sense that the stock outperforms the market index, but not when it is bad. An asymmetric response to good and

bad news in Japan is inconsistent with some cross-country evidence of no significant difference in the speed of price discovery of good and bad news of better-governed firms (Beekes et al., 2016). Taking our findings as a whole, we conclude the adoption of seemingly better governance practices has had a muted effect on corporate transparency in Japan.

The remainder of our paper begins by outlining CG mechanisms in Japan and developing six hypotheses that link governance to indicators of market transparency. Next, we explain the data and methods used. The results from fitting the primary models are then set out and interpreted, followed by a summary of additional tests we undertook. The last section contains our conclusions.

JAPANESE CORPORATE GOVERNANCE

Corporate Governance Mechanisms

Following deregulation of the Japanese financial system, traditional CG structures have weakened as a series of CG reforms have been introduced.

Traditionally, business groupings, or financial *Keirestsu*, have been an important aspect of Japanese CG. *Keiretsu* arrangements can insulate member firms from external pressure while the sharing of information with major shareholders within the group reduces managers' incentives for disclosure (Covrig and Low, 2005). More recently, greater diversity in ownership structures and the declining influence of the main bank have created incentives for greater disclosure and transparency to external parties, as firms attempt to attract increasing proportions of outside investors (Mizuno and Tabner, 2009).

From 2003 companies have been permitted to replace the statutory auditors system with the Committees system. In the auditors system, monitoring and supervision of day-to-day activities is the responsibility of the *Kansayaku-kai* (the board of corporate auditors). At least three *Kansayaku-kai* members are to be elected by shareholders; at least half the members

must be ‘outside’ auditors (e.g. they must not have been an employee, officer or director of the company or its subsidiaries); and at least one must be a full time member (Mizuno and Tabner, 2009). The corporate auditors’ primary duties are to undertake compliance audits and to audit the financial statements alongside the independent auditor. In contrast, firms following the Committees system are required to appoint a CEO with executive authority and their board of directors fulfils a supervisory role (TSE, 2004); and in addition, audit, nomination and remuneration committees are to be established, each with at least three members and a majority expected to be outside directors. Although the Committees system has the virtue of being more easily understood by domestic and foreign shareholders, only about 2% of TSE listed companies had adopted it by 2013 (TSE, 2013).

Unlike US boards of directors, which are dominated by outsiders, Japanese boards are dominated by insiders (Nakano and Nguyen, 2012). Changes to the listing rules in 2009 require TSE listed firms to appoint a minimum of one independent director or one independent statutory auditor. While boards of directors are now of lower average size (Uchida, 2011), the focus remains on the board’s executive function, rather than its monitoring role. Indeed, the value of independent directors in Japan has been questioned given the importance attached by Japanese managers to firm-specific knowledge and experience (Buchanan, 2007). Buchanan et al. (2014:307) argue that “external directors generally do not play a significant role in monitoring management.” Instead, since many company directors have been promoted from within the organisation, much of the monitoring of senior executives is done by their peers.

The TSE Corporate Governance Principles

The TSE has recognised a need to improve CG and to this end it has published a set of principles (released in 2004 and updated in 2009 and 2015) regarding (i) the rights of

shareholders, (ii) their equitable treatment, (iii) relationships with stakeholders, (iv) disclosure and transparency, and (v) the responsibilities of the board of directors, auditors (or the board of company auditors), and other relevant groups (TSE, 2004; 2009a). Disclosure of accurate, material information on a timely basis is singled out as key to good CG. Thus Principle 4 of the 2009 TSE Principles states:

> *"Corporate governance for listed companies should ensure that* ***timely and accurate disclosure*** *is conducted* ***on all material matters*** *including the financial condition, performance results and ownership distribution…Shareholders require periodic, reliable, comparable information sufficient to evaluate the operational conditions of businesses by the management, and further timely disclosure regarding material events taking place during the intervals between periodic disclosures." TSE (2009a: 9) [Emphasis added].*

Timely disclosure of "all material matters" is echoed in the 2015 CG Code. The board of directors, kansayaku board and external auditors are all responsible for ensuring appropriate disclosure takes place (TSE, 2015: 13).

HYPOTHESES

Corporate Governance, and the Frequency and Timeliness of Disclosures

Under the listing rules, security exchanges in Japan require timely disclosure of all material information, which is currently regulated by the Financial Services Agency (FSA) (FSA, 2016). Prompt disclosure to the stock market reduces information asymmetry between the firm's managers and its shareholders (Jensen and Meckling, 1976; Bushman et al., 2004) and it may enable more effective monitoring of the manager's actions (Hermalin and Weisbach, 2012). While disclosure is costly, its potential benefits include a lower cost of equity capital (Botosan, 2000) and a reduced cost of debt (Sengupta, 1998), since credible

disclosures can reassure investors and signal the firm's quality. Greater disclosure is becoming more important in Japan as main bank relationships decline and firms seek the attention of outside investors. There are limits to the amount of information the firm will optimally disclose (Hermalin and Weisbach, 2012) as further disclosures could assist competitors (Verrecchia, 1983). It may also reveal information which managers wish to keep private (Kothari et al., 2009).

Prior literature reports a direct association between the firm's CG and its disclosure practices. For example, greater monitoring provided by better CG is associated with greater disclosure by Australian firms (BB06; Beekes et al., 2016) and lower information asymmetry in USA firms (Kanagaretnam et al., 2007). Consequently we predict a complementary association between the firm's CG and the number of disclosures it makes:

Hypothesis 1. Firms with higher quality CG make a greater number of disclosures to the stock market.

Institutional and cultural factors in Japan could also influence disclosure; e.g. information sharing within corporate groupings may have reduced disclosure incentives and resulted in fewer disclosures, but Cooke (1996) found no evidence to confirm this belief.

Apart from the number of disclosures, their timeliness is also important to good governance, according to the TSE principles. The timing of a news release can, to some extent, be influenced by the firm's manager, who may act opportunistically (Aboody and Kasznik, 2000; Kothari et al., 2009). Timely disclosures may be especially important where there is litigation pressure (Sengupta, 2004), or even a desire of managers to protect themselves against possible future litigation (Skinner, 1994). Cross-country evidence shows better CG (according to conventional criteria) is associated with more timely disclosures (Beekes et al., 2016). Following the TSE guidelines and evidence for other countries, we

predict better governed Japanese firms make more timely disclosures of material information to the market:

Hypothesis 2. Firms with higher quality CG make more timely disclosures to the stock market.

Corporate Governance and Analysts' Forecasts

Next, we look at transparency from the perspective of financial intermediaries, specifically financial analysts. We examine if the level of bias, accuracy and dispersion of financial analysts' earnings forecasts, and in the number of analysts following a stock, are related to the firm's CG. The integrity of the financial statements and the availability of disclosures are influenced by CG (BB06). If information from better-governed firms is more credible, we would expect a greater analyst following since a richer information environment provides a better basis for predicting future earnings (Healy et al., 1999; Lang and Lundholm, 1996). Prior studies of Australian (BB06) and Canadian firms (Beekes et al. 2012) report a positive association between CG and analyst following. On these grounds we expect more analysts to track better-governed firms.

Hypothesis 3. Firms with higher quality CG attract a greater analyst following.

If disclosures from firms with better CG help resolve some of the uncertainty surrounding their future performance, EPS forecasting quality will be associated with CG. Prior work relating to Western countries demonstrates CG is linked to the informativeness of disclosures; e.g. analysts' EPS forecasts are less optimistic and more accurate for better-governed firms in Australia (BB06). Similarly, studies of US firms find a positive association between CG and analyst forecast accuracy (Byard et al., 2006; Behn et al., 2008). However, Douthett et al. (2004) find Japanese firms with keiretsu ties are associated with more accurate EPS forecasts. They attribute their findings to greater monitoring within the group, which enhances the predictability of earnings. Given the declining influence of corporate groups in Japan, and the

prior evidence linking CG and forecasting quality, we predict Japanese firms with better CG have less optimistic and more accurate forecasts:

Hypothesis 4. Analysts' earnings forecasts are less optimistic for firms with higher quality CG.

Hypothesis 5. Analysts' earnings forecasts are more accurate for firms with higher quality CG.

The level of dispersion across analysts' earnings forecasts for the same firm and over the same forecast horizon (*Disagreement)* proxies for the degree of consensus among market experts about the firm's future performance. There may be less uncertainty about future performance if more information is available to analysts when making their forecasts, which could consequently result in greater consensus (Brown and Han, 1992; Lang and Lundholm, 1996). Therefore if disclosures are more credible and earnings predictability is enhanced for firms with better CG, we would predict greater consensus amongst analysts. Consistent with this prediction, Behn et al. (2008) find lower dispersion in forecasts for better-governed firms in the USA. An alternative argument is that additional disclosures by the firm may instead result in greater disagreement as analysts seek to add value by acquiring their own private information, aspects of which may be weighted differently (BB06; Barron et al., 2002; Barron et al., 2005). However, in Japanese firms with keiretsu ties, where incentives exist to retain information within the corporate group, Douthett et al. (2004) find evidence of smaller forecast dispersion. Given the reduced influence of keiretsu and the divergent views in the literature, we make no prediction about the direction of any relationship between CG and the level of disagreement amongst analysts.

Corporate Governance and the Timeliness of Prices

In addition to examining the timeliness of information releases, we examine how quickly value relevant information is incorporated into the firm's stock price. Firms are expected by

the TSE to disclose price sensitive information before it is leaked to the market and indeed, firms with appropriate CG structures may monitor price movements to ensure they meet their disclosure obligations. Prior evidence, though, shows both complementary and substitution relationships between the speed of stock price discovery and CG. Specifically, a cross-country study by Beekes et al. (2016) finds CG is associated on the whole with *less* timely price discovery, which they attribute either to a substitution effect (better and more costly governance structures are adopted to compensate for lower transparency) or to the market taking longer to digest the greater amount of information released by better-governed firms. However both BB06 and Beekes et al. (2015) find better-governed Australian firms have *more* timely price discovery (i.e. a complementary relation), which is in line with the TSE's assumption that better CG is associated with more timely price discovery. Our sixth hypothesis is consistent with the TSE view:

Hypothesis 6. Stock price discovery is faster for firms with higher quality CG.

SAMPLE AND DATA

We focus on Japanese firms with financial years ending between 1 August 2003 and 31 July 2014. Two samples are used, reflecting the frequency of observation: one sample, based on annual data, is used to fit the document and timeliness of prices models; the other sample, based on monthly data, is used to fit the analyst forecast models. The documents and prices sample is restricted to firms in the First Section of the TSE with financial years ending between 1 August 2003 and 31 July 2013 (data were too sparse to include 2014). The second sample comprises firms listed on any Japanese exchange and included in the Thomson Reuters Institutional Brokers Estimate System (I/B/E/S) database. Cases in the second sample are confined to firms with at least two analysts contributing to the consensus forecast, so that there is a value for forecast dispersion, and a forecast horizon of 1 to 11 months to avoid

including more than one consensus forecast for the same firm at the same point in time, and to financial years ending between 1 August 2003 and 31 July 2014.

Our source of CG data is the Nikkei Corporate Governance Evaluation System (CGES). Data for company announcements (document releases) are sourced from the Timely Disclosure Network (TD-Net).[1] Market values are sourced from the CGES BASE files and leverage is from the CGES INDEX files. Other firm-specific data are sourced from the Nomura Research Institute. Information on daily share prices and returns are sourced from Financial Data Solutions. The date of the annual earnings announcement is sourced from TD-Net, Bloomberg, I/B/E/S, Nikkei's financial database (NEEDS) and Worldscope.[2] Monthly observations on analyst following and both forecasts and actual values of annual Earnings Per Share (EPS) are sourced from I/B/E/S. We use the Nikkei's industry definitions to create 12 sector sub-groupings, as shown in Table 1.[3] Matching across the various data sources yields a sample of 14,116 firm-year observations on 1,754 unique firms for the documents and prices models, and 78,791 firm-month observations on 1,338 unique firms for the analyst forecast analysis.[4]

Insert Table 1 about here

Measuring Corporate Governance

CGES rates the quality of each firm's CG annually based upon disclosures in publicly available documents. Its rating system was developed with Japanese firms in mind, although it does take a 'Western' norm as the benchmark of good CG, as demonstrated below. These data therefore provides an excellent opportunity to test whether better CG as assessed largely against Western norms is associated with greater information transparency in Japan. The CG data are reported as at August of each year, and we assume CG data reported in August of

year *t* relate to financial results released during the 12 months from 1 August of year *t*-1 to 31 July of year *t*.

We employ both a composite measure of CG as well as three sub-indexes, namely *Board Organization*, *Board Behavior*, and *Ownership*. *Board Organization* reflects the size and composition of the board of directors, including the proportion of independent directors, and whether the firm has adopted the Committees system. Better CG, as assessed by *Board Organization*, has the following characteristics: (a) a smaller board of directors for more efficient decision making (as found by Yermack, 1996); (b) a greater proportion of independent directors for monitoring purposes (Beasley, 1996); and (c) board committees (audit, nomination and remuneration) to facilitate greater separation between the execution and monitoring of corporate activities. *Board Behavior* assesses the level of directors' share ownership (both in terms of market value and percentage of total shares on issue) and whether a long term incentive plan exists. Better CG, as assessed by *Board Behavior*, has the following characteristics: (a) greater director share ownership; and (b) the use of stock options in place to mitigate agency problems (Jensen and Meckling, 1976). *Ownership* uses the level of ownership by outside parties to proxy for the amount of monitoring they provide. Better CG, as assessed by *Ownership*, has the following characteristics: (a) greater holdings by institutional and foreign investors; (b) less ownership by stable investors (e.g. banks); (c) fewer cross-shareholdings, as they reduce external monitoring (Jiang and Kim, 2004); (d) no ownership by a dominant company (e.g. a parent company); and (e) fewer smaller investors, as they have less economic incentive to monitor.

For each aspect of a firm's CG (e.g. for board size or the proportion of independent directors) CGES assigns a value between 1 and 5 for that year. When aggregating the scores into the relevant sub-index, the score is reverse coded, where necessary, to ensure all scores are increasing in CG quality. For each CG sub-index (*Board Organization, Board Behavior*,

and *Ownership)* we calculate a weighted average score using the weightings provided by CGES; equal weighting is investigated in robustness tests. Finally, we divide the aggregated scores into deciles and replace each aggregated score with its decile value. Since focussing on one sub-index of CG may not adequately capture the underlying relationship, we use an overall index of CG (*CG Composite*) which, consistent with other papers on governance (e.g. Beekes et al. 2016), is the simple sum of the three sub-indexes.

Table 1 shows the mean value of CG by industry for the documents and prices sample. *Board Organization*, *Board Behavior*, and *Ownership* have mean values of 5.045, 4.828 and 7.103 respectively. (Decile scoring is based upon all firms in the CGES database, but the documents and prices sample is limited to the First Section of TSE which is why averages are not 5.5 for each.) *CG Composite* has a mean value of 16.976 (Table 1); and, while most firms score well on *Ownership*, there is significant variation in CG quality by industry in *Board Organization* and *Board Behavior*.

METHOD

Documents and Timeliness Models

In this section we discuss the models relating to the number of documents, and the timeliness of documents and prices together because of commonality in the periodicity of the data and similarities in the metrics used. Equation (1) models the quantity and timeliness of a firm's disclosures, and the timeliness of price discovery of the firm's shares, as a function of the firm's CG structure plus a set of control variables. We estimate Equation (1) using pooled Ordinary Least Squares (OLS) methods with standard errors clustered by firm.

$$DepVar_{it} = \beta_0 + \beta_1 CG_{it} + \beta_2 Size_{\mathbf{it-1}} + \beta_3 Leverage_{\mathbf{it}} + \beta_4 Good\ News_{\mathbf{it}} + \beta_4 Volatility_{\mathbf{it}} + \gamma\ Industry_i + \delta Year_t + \varepsilon_{it} \quad (1)$$

where *DepVar* is a measure of disclosure or timeliness (detailed below); *CG* is Corporate Governance (described earlier); *Size* is the natural log of the firm's market value of equity

measured at the prior year end; *Leverage* is the ratio of total liabilities to total assets, measured at the year-end; *Good News* is an indicator variable equal to one when the firm's share price outperforms the firm's domestic market index over the year, and zero otherwise; *Volatility* is the standard deviation of daily market-adjusted returns over the 90 days immediately prior to the period over which the document count or timeliness is computed; *Industry* is a vector of sector variables; *Year* is a vector of year indicator variables; *i* and *t* are firm and year subscripts respectively; and ε_{it} is the error term.

CG, the main explanatory variable in equation (1), captures the marginal effect of better CG. *Size* controls for the positive association between firms' size and disclosure (Lang and Lundholm, 1993). *Leverage* and *Volatility* control for risk, which may influence investors' disclosure demands (Taylor et al., 2012). *Good news* captures the positive association between the firm's performance and its disclosures (Lang and Lundholm, 1993; Lev and Penman, 1990). *Industry* is included as firms in some sectors (e.g. those that are research intensive) are likely to be less transparent because of their greater proprietary costs (Verrecchia, 1983).

Dependent Variables.

The dependent variables focus upon the number of disclosures by the firm to the TSE and the timeliness of those disclosures, as well as the firm's overall transparency to investors as proxied by the timeliness of price discovery. To obtain the number of disclosures by the firm, we count the number of individual documents filed with the TSE over 365 days ending on the firm's annual earnings release date, denoted day 0 in the documents analysis, following prior literature (e.g. BB06 and Beekes et al. 2015, 2016; further details are available from the corresponding author). We include all documents filed regardless of whether other documents were released on that day as well. The dependent variable is the log of the document count (*Ldocs*).

To measure the timeliness of price-sensitive (material) documents (*Tdocs)*, following Beekes et al. (2016) we first identify all days on which at least one document was released and calculate the stock's log return (r_t) over the announcement period. That period is taken to be the day of the release and the following day (to incorporate announcements made after market closing), or the day of the release only if another announcement is made the following day (to avoid double-counting). These returns are then used to construct three time series representing the cumulative time series for the absolute value of returns relating to all news (both good and bad), for returns relating to good news, and for returns relating to bad news: $CD_t^A = CD_{t-1}^A + |r_t|$; $CD_t^G = CD_{t-1}^G + r_t,\ r_t > 0$; and $CD_t^B = CD_{t-1}^B - r_t,\ r_t < 0$ (the initial value of each time series is set to 0). Each time series is used, in turn, to calculate *Tdocs* as set out in Eq. 2, and in the same fashion to calculate *Tdocs Good* and *Tdocs Bad*:

$$Tdocs = ((\sum_{t=-365}^{t=-1}(CD_0^A - CD_t^A)/CD_0^A) - 0.5)/365 \qquad (2)$$

The constant -0.5/365 is an adjustment to centre the flow of documents over the course of the day and day 0 is the annual earnings announcement date itself. More timely releases to the TSE are manifest in a smaller value of $Tdocs$.

The timeliness of prices, T, measures how quickly value-relevant information is incorporated into a firm's share price over the course of the year leading up to the announcement of the firm's annual earnings (for further explanation and justification of this measure see Beekes and Brown, 2007; Beekes et al., 2015, 2016). It tracks stock price movements for 365 calendar days, ending 14 days after the release of the firm's earnings for the year. *T* is measured as in Eq. (3):

$$T = ((\sum_{t=-365}^{t=-1} |\log(P_0) - \log(P_t)|) - 0.5)/365 \qquad (3)$$

where P_t is the daily market-adjusted share price; and day 0 is 14 days after the announcement date, which is expected to be long enough for prices to settle following the earnings announcement. Note that if daily log returns were i.i.d. (independently and

identically distributed), T would have an expected value of 0.5. Because the timeliness measure T may be biased by idiosyncratic share price volatility, following BB06 we deflate T by one plus the absolute return over the period for which timeliness is calculated, denoted as Timeliness Deflated *(Tdef)*.

We also measure the timeliness of good, bad and all news in prices in much the same way. For the timeliness of good news in prices (*Tgood*), a market-adjusted daily log return series is created, $(r_t^*, t = s, \dots, 0)$, 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 in created, C_t^G, by setting $C_{-365}^G = 0$ and cumulating the daily market-adjusted log return series $C_t^G = C_{t-1}^G + \mathrm{r}_t^G$ from day -364 to day 0, where $r_t^G = r_t^*$ if $r_t^* > 0$; otherwise $r_t^G = 0$. Unlike Beekes et al. (2016) we do not use filtered returns in our primary measure of *Tgood*; measures of timeliness of prices using filtered returns are used in sensitivity analysis, discussed later. The timeliness of good news in prices (*Tgood*) is then calculated as in Eq. (4):

$$Tgood = ((\sum_{t=-365}^{t=-1}(C_0^G - C_t^G)/C_0^G) - 0.5)/365 \qquad (4)$$

The same method is used for the timeliness of bad news ($Tbad$). The timeliness of all news ($Tall$) is the weighted sum of good and bad news measures 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_t^G and C_t^B are the unsigned good and bad news cumulative values at the end of day 0.

Analyst Models

The model in Eq. (5) is used to assess whether the properties of analysts' EPS forecasts and the level of analyst following differ according to a firm's CG. The model also includes a set of control variables that may affect properties of analysts' forecasts and confound their relationship with CG.

$$DepVar_{it} = \beta_0 + \beta_1 CG_{it} + \boldsymbol{\theta Controls_{it}} + \gamma\, Industry_i + \delta Year_t + \varepsilon_{it} \quad (5)$$

where $DepVar$ is a property of EPS forecasts (*Bias, Accuracy, Disagreement* or *Following*). *Bias* is the signed Forecast Error (FE), with FE defined as the mean forecast EPS less EPS as reported by I/B/E/S, deflated by the base price (share price a year before the announcement month); *Accuracy* is the absolute value of the FE, deflated by the base price; *Disagreement* is measured by the standard deviation across analysts' forecasts for that firm-month, deflated by the base price; and *Following* is the number of analysts contributing to the consensus forecasts. $\boldsymbol{Controls}$ is a vector of control variables including *Volatility*, firm size *(Size)*, previous forecast error (*PrevFE*) and its absolute value (*AbsPrevFE)*, and forecast horizon (*Horizon)*. The *Bias* and *Accuracy* models control for *Following* and *Disagreement*, and the *Disagreement* model controls for *Following*. *Volatility* is calculated from daily returns in the 90 days ended the day before the I/B/E/S forecast date and *Size* is the natural log of the firm's market value of equity also on that day. *Horizon* is the number of months from the forecast date to the earnings announcement date. *PrevFE* is last year's FE for the same firm and forecast horizon, deflated by the previous year's base price and *AbsPrevFE* is the absolute value of *PrevFE*. Other variables are as previously defined.

In Eq. (5), CG is the main explanatory variable. Volatility is a proxy for earnings predictability since the financial performance of firms with more volatile earnings is more difficult to predict. Firm size is included as analysts tend to follow larger firms (Bhushan, 1989). Forecast horizon controls for greater forecast accuracy closer to the earnings announcement date. The previous year's forecast error (*PrevFE*) and its absolute value are included because larger errors may encourage analysts to collect additional information to improve the quality of their future forecasts (Barron et al., 2008).

RESULTS

Descriptive Statistics

Insert Table 2 about here

Descriptive statistics for the documents and prices models are presented in Table 2, panel A. The number of documents (*Docs)* released per firm ranges from 2 to 122 over the year. The average is roughly 1.4 documents per month, which is significantly lower than the 6 documents per month released by the average Australian firm (BB06) and suggests Japanese firms may be less forthcoming with information than firms in some other countries. Timeliness (*T*) ranges between 0.011 and 1.999, and from 0.011 to 0.646 when deflated by one plus the absolute rate of return (*Tdef*). The average timeliness, *T*, (*Tdef*) in Japan is 0.156 (0.118), compared with Australian firms in BB06 of 0.219 (0.145). Interestingly, this would imply Japanese firms have more timely price discovery compared with Australian firms, but differences in firm-level volatility across countries make a direct comparison difficult. Firm size (*Size)* in terms of market capitalisation ranges from ¥781 million to ¥24,400 billion. Over half the observations are taken from years where the company out-performed the market (*Good news* mean = 0.610).

Insert Table 3 about here

Correlations for the documents and prices analysis are shown in Table 3, panel A. All measures of CG are positively associated with the log of the number of documents released (*Ldocs*). *CG Composite* is positively associated with measures of timeliness where correlations are significant. *Board Behavior* however is negatively associated with *Tgood*, but

positively associated with *Tbad*, providing initial evidence that components of CG may work differently.

Descriptive statistics for the analyst models are presented in Table 2, panel B. On average about seven analysts contribute to the monthly consensus EPS forecast (*Following* mean=7.372). Forecasts are optimistic on average: the mean forecast bias is 1.4 per cent of the base share price. Mean *Accuracy* (*Disagreement*) is 2.7 (0.7) per cent of the base share price. This compares favourably with data for Australian firms in BB06, where mean *Accuracy* (*Disagreement*) is 6.9 (1.1) per cent of the base share price. It is also consistent with Hope (2003) who shows EPS forecasts for Japanese firms tend to have less forecast dispersion and smaller forecast error compared with firms in other countries. Volatility ranges from less than 1 per cent to 11.1 per cent per day, the average being 1.8 per cent.

Bivariate correlations in Table 3, Panel B show *CG Composite* is associated positively with *Bias*, *Accuracy* and *Following* and negatively with *Disagreement*. On the surface better-governed firms are associated with greater forecast optimism, a larger forecast error and a larger analyst following, while there is less disagreement among the analysts on the firm's future performance. Individual CG measures (*Board Organization, Board Behavior and Ownership*) operate differently. We delve more deeply into these relationships in multivariate analysis.

Disclosure and its Timeliness

Insert Table 4 about here

Results for models of the relationship between the firm's CG and the frequency and timeliness of its disclosures are in Table 4. The coefficients reported in the tables relate to

standardised explanatory variables, to assist interpretation.[5] Results show a complementary (positive) association between CG and disclosure frequency (Table 4, column 1, *coeff.* = 0.0958, p <0.01) which is consistent with Hypothesis 1 and previous evidence (e.g. BB06, Beekes et al. 2016). Recall smaller values of timeliness are associated with more timely (earlier) disclosures. We find better governance is associated with more timely release of documents to the TSE (column 2, *coeff.* = -0.0033, p <0.01), consistent with Hypothesis 2 and Beekes et al. (2016). Firms whose stock price outperforms the market over the year make fewer disclosures and are on the whole less timely in their disclosures: the *Good News* coefficient is negative in column (1) and positive in column (2). All regressions include year and industry fixed effects but for brevity their details are omitted from the tables.

Given the TSE encourages firms to provide information to all parties in an unbiased manner, we separately examine whether the favourability of news (i.e. whether it is good or bad) affects the timeliness of disclosures. When there is good news (*Tdocs Good*), results show better-governed firms are significantly more timely when releasing price-sensitive documents to the TSE (Column 3, *coeff.* = -0.004, p = 0.05). However, we do not find a comparable effect for bad news documents (*Tdocs Bad,* Column 4), suggesting an asymmetric response to news favourability. Consistent with this result, Beekes et al. (2016) find code law countries (such as Japan) make earlier announcements of good news relative to bad news, which they attribute to lower litigation pressure in code law countries.

In sum we find CG is associated with both the frequency and the timeliness of disclosures.

Properties of Analysts' Earnings Forecasts

Insert Table 5 about here

Results for the analyst models are in Table 5. In these models, the standard errors are clustered by firm-year since forecasts for each firm-year can be included up to 11 times in each estimation sample. Note that *Bias* in analysts' earnings forecasts may be positive (optimistic) or negative (conservative) and lower values of *Accuracy* indicate greater forecast accuracy. Table 5 shows better CG is associated with a greater optimism in analysts' earnings forecasts (column 1, *coeff.* = 0.0033, p <0.01) and correspondingly forecasts are less accurate (column 2, *coeff.* = 0.0026, p <0.01). This is contrary to Hypotheses 4 and 5, and differs from prior evidence. BB06 reported, for Australian firms, a one standard deviation increase in the 'quality' of CG was associated with a 37% reduction in average bias. This inconsistency may be due to the previous inability of Japanese analysts to correctly appraise the influence of changes in CG on monitoring insiders, or on the credibility of information provided to outside parties. Alternatively, analysts may have over-weighted the importance of CG in determining financial performance. Yet another possibility is that the optimistic bias reflects the price analysts pay for greater access to managers when framing their forecasts.

There is less dispersion in analysts' forecasts about future earnings of firms with better CG (Table 5, column 3, *coeff.* = -0.0002, p = 0.10). BB06 find analysts have more divergent views for Australian firms with better CG. However, as mentioned earlier, idiosyncratic information generated by analysts for firms which provide more information does not necessarily lead to greater consensus (Barron et al., 2002), which may explain the apparent inconsistency. Analyst following is found to be positively associated with CG quality (Table 5, column 4, *coeff.* = 0.5286, p <0.01), consistent with Hypothesis 3 and prior evidence for Australia (BB06). The coefficients of the control variables typically have their expected sign.

In sum our results suggest CG is associated with greater analyst following but more optimistic and less accurate forecasts.

Timeliness of Price Discovery

Insert Table 6 about here

Results for the timeliness of price discovery are presented in Table 6. Stock prices of better-governed firms reflect performance information in a less timely fashion (columns 1 and 2), which is inconsistent with Hypothesis 6. CG is not a statistically significant factor in the timeliness of all news (*Tall*, column 3). Control variables generally have coefficients with the expected sign except for *Good News*, which suggests the firm's shares are priced less efficiently when they outperform the market average that year. When the speed of price discovery is measured separately for the stock's good and bad news days on the market, better CG is associated with faster stock price discovery for good news (Column 4, *coeff.* = -0.0009, p = 0.05) although there is no comparable effect for bad news (Column 5). This differs from Beekes et al. (2016), who report the shares of better governed firms in code law countries such as Japan are typically priced less efficiently, irrespective of whether the news is good or bad.

Interpretation

In this section we summarise the extent of support for our hypotheses on the link between CG and corporate transparency in Japan. First, we find a positive association between CG and disclosure frequency. Second, we find the timeliness of disclosure is also related to the firm's CG structures in that firms with better CG make more timely disclosures (which are integrated into stock prices) when their news is good. This asymmetric focus on good rather

than bad news may be due to cultural pressures; for example, there is evidence that managers tend to be optimistic in their earnings forecasts (Cho et al., 2011). Perhaps managers feel that giving priority to bad news may lead to termination of their employment contract, as bad news may be perceived as personal failure. Alternatively, it may mean that outside directors are less effective monitors when their boards are dominated by insiders (Buchanan et al., 2014). Third, we find firms with better CG are followed by more analysts, although the analysts' earnings forecasts are more optimistic and less accurate, which is consistent with analysts placing too much emphasis on the importance of CG for the firm's future performance.

ADDITIONAL RESULTS

Components of Corporate Governance

To focus on which sub-components of CG are more influential we re-estimated our results including *Board Organization*, *Board Behavior* and *Ownership* as separate explanatory variables in place of their sum, *CG Composite*. The coefficients on the CG sub-indexes are reported in Table 7. All three components of CG are positively associated with the overall level of disclosure, consistent with the main results (column 1, panel A). However the timeliness of disclosures varies by component. *Board Organization* and *Board Behavior* are associated with more timely disclosures to the stock market (column 2, panel A). *Ownership*, however, is weakly associated with less timely disclosures, especially for bad news (column 4, panel A). This result is contrary to our prediction and to sentiments in Skinner (1994): it implies firms with greater cross-shareholdings and bank relationships make more timely disclosures. We conclude that while all three components of CG are positively associated with the quantum of disclosures, only board structures and directors' incentives

improve the timeliness of those disclosures. In particular, greater monitoring by outside shareholders has not increased the timeliness of disclosures.

Insert Table 7 about here

The results for the analyst models are in panel B. Consistent with our main results (Table 5), all sub-components of CG are associated with greater analyst following, and with more optimistic and less accurate earnings forecasts. *Board Behavior* is associated with less disagreement among the analysts, perhaps because firms with better *Board Behavior* achieve a greater alignment between directors' and shareholders' incentives (column 3, panel B). *Ownership* is associated with less agreement, perhaps indicating analysts have differing views on the influence of ownership structure on monitoring effectiveness and ultimately on the firm's financial performance. In sum, although analyst following is positively associated with CG, the quality of their forecasts appears to be greater for firms with lower quality CG.

The timeliness of prices differs according to aspects of CG, as shown in panel C of Table 7. *Board Behavior* is associated with faster price discovery for good news, but slower price discovery for bad news, as in the main analysis (columns 3 and 4, panel C). *Ownership* is associated with timelier price discovery for bad news, but there is no significant association for good news. This may suggest there is potentially greater litigation pressure, perhaps foreign-sourced, for firms with greater external ownership. There is no significant association between *Board Organization* and the timeliness of prices.

We conclude the size and composition of the board of directors and its committees influences disclosure policies: better *Board Organization* encourages more disclosures to the TSE and on a timelier basis. Greater alignment of interests between managers and

shareholders, through share ownership and incentives, is also accompanied by a greater number of disclosures; however the disclosure of bad news is delayed, perhaps for opportunistic reasons. This asymmetry between the disclosure of good and bad news is reflected in the timeliness of prices for firms with better *Board Behavior*. Firms with greater external share ownership (higher *Ownership)* make more disclosures, but disclosure of bad news is less timely. Despite this pattern, stocks are priced more efficiently for bad news when there is greater external ownership. Thus, even if firms were to attempt to conceal bad news, it may be the case that the absence of any bad news will prompt investors to correct stock prices more quickly anyway. Finally, regardless of the component of CG, analysts' views of firms with better CG appear to be overly optimistic, consistent with them ascribing too much influence to better CG on the credibility of corporate disclosures and thereby overestimating the future performance of the firm.

Robustness Testing

We conducted a number of robustness tests (results not tabulated): (i) excluding observations for firms which follow the Committees System of CG (as in the West), resulting in a loss of 2% of observations in the documents and prices sample and 4% in the analyst sample; (ii) using alternative measures for firm size (log of total assets and log of total revenues); (iii) using equal weightings for the components of CG within each subgroup; (iv) using a measure of CG which is not re-based annually to allow the data to reflect changes in CG over time; (v) using the value of CG in the previous year; (vi) including the book-to-market ratio as an additional explanatory variable to control for growth opportunities, because firms with greater growth opportunities may prefer less disclosure due to proprietary costs (Verrecchia, 1983); (vii) confining the estimation sample to the 80% of cases with a March year end; (viii) censoring the top and bottom 1 per cent of dependent variables to control for outliers; (ix) including an additional explanatory variable to control for the annual

reporting lag; (x) using Poisson estimation methods for the disclosure frequency models to allow for count dependent variables; (xi) using alternative measures of *Tgood, Tbad* and *Tall* which take into account the reporting lag or filter out smaller returns because they are likely to be more noisy; and (xii) using a smaller database on analysts' forecasts, provided by the International Financial Information Service (IFIS), an alternative to I/B/E/S. Results, which are available from the corresponding author, are broadly consistent across the various specifications. We also investigated the use of instrumental variable methods to control for endogeneity in CG. However, we could not identify reliable instruments for our models, largely for reasons discussed in Larcker and Rusticus (2007) and Brown et al. (2011). Consequently we base our findings on OLS estimates with clustered standard errors.

CONCLUSIONS

We examined the association between CG and Japanese firms' transparency to external investors from mid-2003 to mid-2014. During this period CG was the subject of major regulatory attention. In particular, the TSE released a set of CG principles which specifically identify corporate transparency and disclosure as an important issue for Japanese firms; listed companies had the choice of adopting a Committees system of CG as in the West, in lieu of the Corporate Auditors system that is traditional in Japan; since 2009 each listed company has been required to appoint at least one independent director or an independent statutory auditor; and ownership structures have evolved resulting in smaller cross-shareholdings and greater foreign ownership, which have created different expectations in terms of CG and transparency.

We used data from CGES which rates the CG of firms based upon Western principles adapted to the Japanese environment. Japan thus provides a good test of whether aspects associated with better CG in the West (such as smaller boards of directors with greater

independent director representation, greater directors' share ownership, and smaller cross-shareholdings coupled with greater external ownership) influence the informativeness of disclosures in Japan. We do this firstly by examining the frequency and timing of corporate disclosures. Secondly, we examine transparency from the perspective of financial intermediaries, specifically financial analysts, by studying differences in the level of bias, accuracy and dispersion of analysts' earnings forecasts, and the number of analysts following a stock. Thirdly, we examine the speed of stock price discovery over 12 months leading up to the announcement of the firm's earnings for the year.

We conclude increased monitoring provided by better CG is effective at increasing the overall quantity of disclosures made, consistent with expectations and prior research. Results also show CG is associated with greater analyst following and more consensus in earnings forecasts. Unlike prior work for Australia (BB06), we find analyst forecasts are more optimistic and less accurate for better-governed Japanese firms, which may be attributed to analysts placing too much weight on the influence of CG on the credibility of information releases. Price discovery is faster for Japanese firms with better CG, but only when the stock market considers their news is good. The asymmetric timeliness of good over bad news in releases to the stock market and also in the market's incorporation of news is a novel finding and was not found by Beekes et al. (2016). Our results are consistent with managers responding opportunistically to incentives to increase the timeliness of good news, which follows through to the stock market's reaction.

This study includes an important implication for policy-makers and practitioners. Different CG mechanisms affect disclosures and their informativeness to market participants. So far the adoption of Western style CG structures has been only partially effective. In particular, when framing future guidelines there may be benefit in focusing on promoting the earlier disclosure of bad news.

[1] This captures both mandatory and voluntary disclosures to the TSE. All documents are assigned a three-digit classification code by the TSE. If a disclosure document is assigned more than one classification code, each is separately counted to include multiple contents. Document releases include information on financial results, earnings and dividend forecasts and other disclosures about share capital, as well as voluntary disclosures.

[2] The identification of earnings announcement dates was a complex process in which we triangulated the different sources of data. 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.

[3] The Nikkei industry classifications are finely partitioned and consequently some industries have few observations in our sample. We were unable to map the 36 Nikkei industry classifications on to other commonly used industry sector definitions. Also we were unable to source Global Industry Classification Standard for all sample companies.

[4] In the documents and prices sample, the number of observations by CGES year (2004 – 2013) is as follows: 1,134, 1,323, 1,402, 1,455, 1,484, 1,489, 1466, 1,447, 1,453 and 1,463. For the analysts' sample, the number of observations by CGES year (2004 – 2014) is as follows: 7,773, 7,478, 7,853, 8,361, 7,673, 7,457, 7,543, 7,082, 7,078, 7,147 and 3,346.

[5] The intercept term in each model is the mean of the dependent variable and for continuous variables the coefficient indicates the marginal effect of a one standard deviation increase on the dependent variable. For binary variables, the coefficient indicates the marginal effect of changing the category (from coded 0 to coded 1) of the independent variable.

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TABLE 1
Mean Corporate Governance Scores in Documents and Prices Sample, by Industry

Industrial Sector Description (Nikkei Industry Codes)	*No of obs.*	*Components of CG:*			*CG Composite*
		Board Organization	*Board Behavior*	*Ownership*	
1. Food and Fishing (1, 35)	689	4.983	4.405	6.599	15.987
2. Chemicals, Petrochemicals and Pharmaceuticals (7, 9, 11)	1,501	5.029	4.574	7.387	16.991
3. Iron and Steel, Non-ferrous Metal and Metal Products (17, 19)	886	4.708	3.611	7.069	15.387
4. Machinery (21)	1,128	4.998	4.738	7.480	17.217
5. Electric and Electronic Equipment (23)	1,506	5.831	4.894	7.947	18.672
6. Motor vehicles and Autoparts (27)	465	3.591	4.501	7.092	15.185
7. Transportation and Equipment, Warehousing and Harbor Transportation (29, 55, 57, 59, 61, 63)	703	3.902	3.710	6.585	14.196
8. Construction (41)	930	3.734	3.269	6.381	13.384
9. Wholesale and Retail Trade (43, 45)	2,313	5.418	5.829	6.967	18.214
10. Utilities and Communications Services (65, 67, 69)	307	4.521	4.062	7.977	16.560
11. Services (71)	1,627	5.671	6.492	6.638	18.801
12. Other (3, 5, 13, 15, 25, 31, 33, 37, 53)	2,061	5.147	4.518	7.150	16.815
Total Sample (All industries)	14,116	5.045	4.828	7.103	16.976

Notes: The sample ($N = 14{,}116$) comprises Japanese firms with year ends between 1 August 2003 and 31 July 2013. *Board Organization*, *Board Behavior* and *Ownership* are measures of three components of corporate governance quality as assessed by CGES; *CG Composite* is the sum of the three components. Industrial sectors are derived from the Nikkei industry definitions (industry codes are shown in parentheses).

TABLE 2
Descriptive Statistics

Panel A: Documents and Prices Models						
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
Tdocs	13,561	0.543	0.543	0.110	0.129	0.964
Tdocs Good	13,561	0.539	0.538	0.164	0.007	0.999
Tdocs Bad	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 Organization	14,116	5.045	5	3.070	1	10
Board Behavior	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
Lev	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
Good News = 1	14,116	0.610			0	1
Panel B: Analyst Models						
Variables	*N*	*Mean*	*Median*	*Std. Dev.*	*Min.*	*Max.*
Bias	78,791	0.014	0.001	0.089	-0.645	3.972
Accuracy	78,791	0.027	0.009	0.086	0.000	3.972
Disagreement	78,791	0.007	0.004	0.019	0.000	2.400
Following	78,791	7.372	6	5.225	2	30
CG Composite	78,791	19.443	20	4.978	4	30
Board Organization	78,791	5.224	5	3.211	1	10
Board Behavior	78,791	5.705	6	2.820	1	10
Ownership	78,791	8.514	9	1.753	1	10
Prev FE	78,791	0.010	0.001	0.077	-0.645	4.177
Abs(PrevFE)	78,791	0.023	0.008	0.074	0.000	4.177
Size(¥m)	78,791	417,042	135,325	1,024,137	1,845	24,400,000
Lev	78,791	48.600	48.950	19.750	1.540	99.780
Volatility_Analyst	78,791	0.018	0.017	0.009	0.002	0.111
Horizon	78,791	6.075	6	3.120	1	11

Notes: Docs is the number of documents filed with the Tokyo Stock Exchange over the year. *Ldocs* is the natural logarithm of *Docs*. *Tdocs* is the timeliness of documents weighted by stock returns associated with the document release. *Tdocs Good (Bad)* is the timeliness of documents when there is good (bad) news weighted by stock 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 day; a price rise is classified as 'good news' and a price decline is classified as 'bad news'. *T is* the timeliness metric for stock 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 period for which *T* is measured. *Tgood* is the timeliness of prices on days when the stock 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. *Bias* is the signed forecast error (FE) and is the mean forecast Earnings Per Share (EPS) less EPS as reported by I/B/E/S, deflated by the base share price (share price a year before the announcement month). *Accuracy* is the absolute value of the FE. *Disagreement* is the level of disagreement among analysts, measured by the standard deviation across analysts' forecasts for that firm-month deflated by the base price. *Following* is the number of analysts contributing to the consensus forecast. *Size* in the documents and timeliness models is the market value of equity (in ¥ million) at the end of the previous financial year, and in the analysts' sample is the market value of equity (in ¥ million) a day before the I/B/E/S monthly cut-off date. *Lev* is the firm's leverage defined as total liabilities divided by total assets at the end of the 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 log returns over the 90 day period ending the day before the start of the period for which *T* is measured. *Good News* is a dummy variable equal to one if the market-adjusted return over the period for which *T* is measured is positive, and zero otherwise. *Volatility_Analyst* is the standard deviation of daily log returns in the 90 trading days ended the day before the I/B/E/S forecast cut-off date. *PrevFE* is the last year's FE, deflated by previous year's base price; *Abs(PrevFE)* is the absolute value of *PrevFe*. *Horizon* is the forecast horizon, measured by the number of months from the forecast cut-off date until the company makes its annual earnings announcement to the Tokyo Stock Exchange. Governance variables are defined in Table 1.

TABLE 3
Bivariate Relationships
PANEL A: Variables in Documents and Prices Models (*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 Organization	0.18*	0.18*	0.05*	0.05*	0.01	0.01	0.01	0.65*							
10. Board Behavior	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	0.19*	0.18*	-0.06*	-0.07*	0.00	0.02	0.01	0.13*	-0.00	0.05*	0.22*				
13. Lev	0.08*	0.07*	0.15*	0.15*	0.03*	-0.01	0.02	-0.24*	-0.04*	-0.31*	-0.12*	0.02			
14.Volatility_Docs	0.01	-0.01	0.22*	0.22*	-0.15*	-0.21*	-0.20*	-0.02*	0.07*	-0.12*	-0.00	-0.09*	0.22*		
15. Volatility_Prices	0.10*	0.08*	0.57*	0.55*	0.12*	0.08*	0.12*	-0.01	0.10*	-0.09*	-0.03*	-0.12*	0.24*	0.51*	
16. Good News = 1	-0.01	-0.01	0.16*	0.15*	0.09*	0.11*	0.11*	0.04*	-0.02	0.03*	0.06*	0.05*	0.00	0.09*	0.19*

PANEL B: Variables in the Analysts' Regressions (N= 78,791)

	[1]	*[2]*	*[3]*	*[4]*	*[5]*	*[6]*	*[7]*	*[8]*	*[9]*	*[10]*	*[11]*	*[12]*	*[13]*
1. Bias													
2. Accuracy	0.92*												
3. Disagreement	0.32*	0.38*											
4. Following	-0.03*	-0.05*	0.00										
5. CG Composite	0.03*	0.01*	-0.02*	0.13*									
6. Board Organization	0.03*	0.04*	0.02*	0.08*	0.74*								
7. Board Behavior	0.01*	-0.03*	-0.07*	-0.09*	0.65*	0.12*							
8. Ownership	0.01	0.00	0.02*	0.38*	0.42*	0.09*	0.03*						
9. Prev FE	0.17*	0.22*	0.23*	-0.02*	0.01*	0.04*	-0.03*	0.01*					
10. Abs(PrevFE)	0.16*	0.23*	0.25*	-0.03*	-0.01	0.05*	-0.06*	0.00	0.90*				
11. Size	-0.03*	-0.04*	-0.02*	0.51*	0.02*	-0.02*	-0.04*	0.17*	-0.03*	-0.04*			
12. Lev	0.09*	0.13*	0.13*	0.07*	-0.19*	-0.06*	-0.28*	0.01*	0.09*	0.14*	0.08*		
13. Volatility_Analyst	0.21*	0.23*	0.17*	-0.09*	0.08*	0.07*	0.07*	-0.02*	0.11*	0.12*	-0.09*	0.07*	
14. Horizon	0.07*	0.10*	0.04*	-0.01*	0.00	0.00	0.01	-0.02*	0.05*	0.10*	-0.01	0.00	-0.03*

Notes: The correlation matrix in panel A above excludes the variables *Tdocs, Tdocs Good* and *Tdocs Bad* as they are based upon a smaller sample ($N = 13{,}561$). *Size* in this and subsequent tables is the log of the size variable in Table 2; all other variables are as defined in Tables 1 and 2. Correlations significant at the 5% level or better (two-tailed test) are starred.

TABLE 4
The Relationship between Corporate Governance, and the Frequency and Timeliness of Disclosures

Dependent Variable:	*Ldocs*	*Tdocs*	*Tdocs Good*	*Tdocs Bad*
Column No:	*(1)*	*(2)*	*(3)*	*(4)*
CG Composite	0.0958***	-0.0033***	-0.0040**	-0.0011
	[13.87]	[-2.84]	[-2.33]	[-0.65]
Size	0.0838***	-0.0096***	-0.0060***	-0.0110***
	[10.26]	[-8.14]	[-3.55]	[-6.98]
Leverage	0.0606***	0.0061***	0.0081***	0.0037**
	[8.31]	[5.28]	[4.78]	[2.41]
Good News	-0.0232***	0.0097***		
	[-3.33]	[4.99]		
Volatility	0.0142**	-0.0063***	-0.0104***	-0.0021
	[2.46]	[-4.85]	[-5.85]	[-1.26]
F-test	86.38***	55.32***	29.97***	27.79***
Adj. R^2	0.220	0.081	0.048	0.039
Year & Industry FE	Yes	Yes	Yes	Yes
N	14,116	13,561	13,561	13,561

Notes: All coefficients relate to explanatory variables that have been standardized to assist interpretation. *Volatility* represents the variable *Volatility_Docs*. The sample comprises firms 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 with standard errors robust to the presence of heteroscedasticity. All standard errors are clustered by firm. Variables as previously defined. *t*-statistics are shown in parentheses. * $p<0.1$; ** $p<0.05$; *** $p<0.01$ (two-tailed *t*-test).

TABLE 5
The Relationship between Properties of Analysts' Earnings Forecasts and Analyst Following, and Corporate Governance

Dependent Variable:	*Bias*	*Accuracy*	*Disagreement*	*Following*
Column No:	*(1)*	*(2)*	*(3)*	*(4)*
CG Composite	0.0033***	0.0026***	-0.0002*	0.5286***
	[3.65]	[3.08]	[-1.66]	[14.94]
Following	0.0011	-0.0001	0.0008***	
	[0.80]	[-0.06]	[3.41]	
Disagreement	0.0238***	0.0266***		
	[7.47]	[7.24]		
PrevFe	0.0081**			
	[2.12]			
Abs(PrevFE)		0.0097**	0.0038***	-0.0078
		[2.26]	[2.92]	[-0.21]
Volatility_Analyst	0.0092***	0.0098***	0.0031***	0.3095***
	[4.67]	[5.01]	[4.66]	[10.01]
Size	-0.0046***	-0.0054***	-0.0013***	4.2248***
	[-2.75]	[-3.49]	[-4.56]	[114.77]
Leverage	0.0048***	0.0074***	0.0018***	-0.0785**
	[5.24]	[7.74]	[10.07]	[-2.15]
Horizon	0.0049***	0.0071***	0.0005***	0.0593***
	[10.19]	[12.11]	[3.36]	[5.85]
Adj. R^2	0.151	0.210	0.117	0.647
F-test	16.66***	29.95***	50.77***	597.46***
N	78,791	78,791	78,791	78,791
Year & Industry FE	Yes	Yes	Yes	Yes

Notes: All coefficients relate to variables that have been standardized to assist interpretation. The sample comprises firms in the CGES database with financial years ending between 1 August 2003 and 31 July 2014. Results are estimated using pooled cross section and time series regression fitted by OLS with standard errors robust to the presence of heteroscedasticity. All standard errors are clustered by firm-year. Variables as previously defined. *t*-statistics are shown in parentheses. * $p<0.1$; ** $p<0.05$; *** $p<0.01$ (two-tailed *t*-test).

TABLE 6
The Relationship between Corporate Governance and the Timeliness of Price Discovery

Dependent Variable:	*T*	*Tdef*	*Tall*	*Tgood*	*Tbad*
Column No:	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*
CG Composite	0.0015	0.0013**	-0.0002	-0.0009**	0.0002
	[1.31]	[2.05]	[-0.67]	[-2.21]	[0.59]
Size	0.004***	0.001	-0.001**	0.000	-0.000
	[3.15]	[1.33]	[-2.40]	[1.09]	[-0.65]
Leverage	0.0026**	0.00027***	0.0007**	0.0011**	-0.0002
	[2.12]	[3.64]	[2.20]	[2.53]	[-0.58]
Good News	0.0183***	0.0099***	0.0088***		
	[10.26]	[9.30]	[13.41]		
Volatility	0.0699***	0.0360***	0.0021***	0.0040***	0.0018***
	[26.05]	[23.54]	[4.31]	[6.19]	[4.15]
F-test	106.37***	133.17***	221.23***	121.33***	269.47***
Adj. R^2	0.344	0.332	0.293	0.184	0.288
Year & Industry FE	Yes	Yes	Yes	Yes	Yes
N	14,116	14,116	14,116	14,116	14,116

Notes: All coefficients relate to variables that have been standardized to assist interpretation. *Volatility* represents the variable *Volatility_Prices*. The sample comprises firms 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 with standard errors robust to the presence of heteroscedasticity. All standard errors are clustered by firm. Variables as previously defined. *t*-statistics are shown in parentheses. * $p<0.1$; ** $p<0.05$; *** $p<0.01$ (two-tailed *t*-test).

TABLE 7

The Marginal Influence on Transparency of Three Components of Corporate Governance

PANEL A: Documents

Column No:	*(1)*	*(2)*	*(3)*	*(4)*
Dependent Variable:	*Ldocs*	*Tdocs*	*Tdocs Good*	*Tdocs Bad*
Board Organization	0.0633***	-0.0021**	-0.0010	-0.0011
	[10.58]	[-2.03]	[-0.68]	[-0.74]
Board Behavior	0.0624***	-0.0044***	-0.0061***	-0.0037**
	[8.38]	[-3.74]	[-3.52]	[-2.35]
Ownership	0.0158***	0.0021	0.0012	0.0039**
	[2.28]	[1.62]	[0.66]	[2.18]

PANEL B: Analyst Following and Forecasts

Dependent Variable:	*Bias*	*Accuracy*	*Disagreement*	*Following*
Board Organization	0.0012*	0.0018***	0.0001	0.3108***
	[1.65]	[2.63]	[0.46]	[8.97]
Board Behavior	0.0027***	0.0009	-0.0009***	0.1877***
	[2.82]	[0.96]	[-5.53]	[5.20]
Ownership	0.0017**	0.0016**	0.0007***	0.3854***
	[2.18]	[2.32]	[5.08]	[11.32]

PANEL C: Timeliness of Prices

Dependent Variable:	*Tdef*	*Tall*	*Tgood*	*Tbad*
Board Organization	-0.0002	0.0002	0.0000	0.0001
	[-0.42]	[0.94]	[0.03]	[0.48]
Board Behavior	0.0026***	-0.0002	-0.0011**	0.0010***
	[4.22]	[-0.54]	[-2.57]	[3.04]
Ownership	-0.0004	-0.0005	-0.0005	-0.0010***
	[-0.62]	[-1.51]	[-0.96]	[-2.71]

Notes: All coefficients relate to variables that have been standardized to assist interpretation. The sample comprises firms in the CGES database with financial years ending between 1 August 2003 and 31 July 2013 (panels A and C), and between 1 August 2003 and 31 July 2014 (panel B). Results are estimated using pooled cross section and time series regression fitted by OLS with standard errors robust to the presence of heteroscedasticity. Standard errors are clustered by firm in panels A and C, and by firm-year in panel B. In the interests of brevity, only the coefficients for the corporate governance variables 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).