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International Regulatory Spillover and the Tailoring of Corporate Disclosures

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International Regulatory Spillover in Corporate Disclosures

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Abstract: Regulators may create inconsistent or even contradictory disclosure requirements across jurisdictions. In the modern world where the securities of firms are traded in multiple countries, firms must choose between utilizing one set of disclosures that is consistent across the world and tailoring disclosures to local markets. Examining the 2023 change in sustainability disclosure requirements in Japan, we show that consistency in international disclosures is a function of firm dependence on local markets. Specifically, firms most dependent on US markets differentiate their Japanese and US disclosures, tailoring their US disclosures to local shareholders. In contrast, Japanese firms with lower exposure to US markets utilize a more unified disclosure policy.

[1] This research was conducted while I was the Shimomura Fellow at the Development Bank of Japan. I would like to thank the Research Institute of Capital Formation at the Development Bank of Japan for funding.

1. Introduction

There are many reasons for a firm to issue securities in multiple jurisdictions such as increasing the shareholder base (Foerster and Karolyi, 1999), improving international recognition of a firm (Merton, 1987), matching the currencies of assets and liabilities (Kedia and Mozumdar, 2003), or obtaining better governance in a particular market (Doidge et al., 2004). A major push for firms located in countries with poor minority shareholder rights is to list in high minority rights countries to obtain improved valuation through bonding (Coffee, 1999, Doidge et al., 2004). But disclosure and filing differences between countries are significant and jurisdictions with high disclosure requirements benefits firms significantly (La Porta et al., 2006), necessitating firms to make a choice about disclosure. While complying with the securities regulation of each jurisdiction, should firms tailor their disclosures by country, or create one unified set of disclosures that satisfy requirements in all countries?

In this paper we examine the disclosure choices a firm trading in multiple jurisdictions must make, trading off the benefits of a unified disclosure across all jurisdictions with the benefits of tailoring disclosures for each individual market. Such a choice implies that there are spillover effects for disclosure regulations across countries where one country's disclosure requirements impact disclosures in a different country. We develop a model to show the key determinants in firm choice of tailoring market disclosures. We find that the costs of tailoring the financial disclosures, the preferences of investors in various markets, and the size of firm exposure in various markets are key determinants of firms choosing to tailor their financial disclosures.

We find a unique setting to test the model, the adoption of a new sustainability requirement in Japanese markets adopted by the Financial Services Agency in 2023. Beginning in March 2023, Japanese firms were required to make significant changes to their annual reports, including a section explicitly discussing sustainability. This quasi-experimental setting was unique in that the FSA did not outright adopt IFRS s1 or s2, but developed its own Japanese standard using a similar framework. This gave firms considerable discretion in how they reported and disclosed this new framework in Japanese markets. At the same time, firms could choose to include this disclosure in their US filings or to omit this section completely from their US filings. Naturally, since the disclosure was not mandated in US markets, firms could optimize the way that they disclosed this information.

Our empirical tests show that firms significantly increased sustainability disclosures in the Japanese markets after the implementation of the new sustainability requirement. At the same time, US filings also show a distinctive increase in the reported incidence of sustainability after the change in Japanese requirements. At the same time, increases in sustainability disclosures in US markets was smaller than the increases in the Japanese markets. This suggests that firms were not simply copying their additional Japanese sustainability disclosures into their US disclosures, but firms were using some discretion over how they tailor their US disclosures.

Our results show that the significant determinants of disclosure include the exposure of the firm to a particular market, consistent with our theoretical model. Specifically, firms with larger exposure to US markets tend to tailor their disclosures to US shareholders, differentiating their Japanese and US filings. In contrast, firms with low exposure to US markets file US disclosures that are nearly identical to their Japanese filings, translated into English. This suggests that firms are strategic in how they report their disclosures both in US and Japanese markets.

We build on the voluntary disclosure literature by modeling disclosure as a firm choice that trades off capital market benefits with reporting costs. In traditional disclosure models, firms may be conservative in their disclosure policies because of proprietary costs or strategic disadvantages that come from disclosure (Verrecchia, 1983). Firms may also choose to disclose to enhance firm value and liquidity by reducing information asymmetry and lowering the firm's cost of capital (Diamond and Verrecchia, 1997, Hail and Leuz, 2006). This research provides a foundation for a model where firms trade off costs from tailoring disclosures across markets versus following one uniform policy across all markets.

Our model is closely tied to the literature on cross-listing in foreign markets and the benefits of bonding when a firm is incorporated in a jurisdiction with weak minority shareholder protections (Coffee, 1999). Empirical research supports this idea showing that firms using American Depository Receipts (ADRs) to list in the US often have higher value, better access to capital, and improved governance from these cross listings (Reese and Weisbach, 2002, Bailey et al, 2004). In addition, firms listing in weak-disclosure regimes often benefit significantly by having a US-based ADR which requires significantly more press releases (6-K filings, Boone et al., 2021). A key feature of our model is that investors in different markets have different preferences for information disclosure. This has been shown to be true in the way that US investors are less likely to prefer ESG disclosures compared to investors in Europe (Frenkel et al., 2025).

The resulting framework ties a firm's disclosure choice to both the investor preferences in a particular market plus the firm level costs of producing and monitoring multiple disclosures. Uniform disclosures across countries reduces the firm's preparation costs and compliance costs, but could result in some investors being less able to process the information disclosed by the firm

(Blankespoor et al., 2020). In contrast, perfectly tailoring disclosure across all markets where a firm trades could lead to significant costs for the firm. At the same time, if these costs are smaller than the market benefits from tailoring the disclosures in a particular market, the firm will naturally tailor its disclosures.

Our paper also has significant implications for regulators and accounting experts. We suggest that firms can voluntarily disclose certain information when it reduces information processing costs for investors in a particular market (Blankespoor et al., 2020), but refrain from disclosure when it increases costs. In addition, regulators should exercise caution in proposing new disclosure rules since there can be significant spillover costs for firms in markets outside of the market where disclosure rules are binding (Naughton et al., 2018). This suggests that new rules such as reporting concerning the CEO to median employee salary ratio or the CEO pay structure may increase firm value in one market, but may actually be misleading or value-reducing in another market.

The paper proceeds as follows. In section 2 we derive the theoretical model to illustrate the costs and benefits of disclosure for the firm. In section 3 we discuss our sample and set up our empirical tests. In section 4 we report our results and in section 5 we conclude.

2. Theoretical model

Our model begins with a firm that makes disclosures in J markets indexed by $j = 1, \ldots, J$. In each market, investors evaluate the firm based on the disclosures in the local market.[2] The

[2] Our model is generalizable to allowing investors to consider disclosures in other markets. However, our model suggests that firms make disclosures in the local market to minimize the processing costs of disclosures in the local market (Blankespoor et al., 2020). This suggests that while investors could learn new information about the firm

firm chooses one of two disclosure regimes. Either the firm chooses to utilize the same universal filing U for all markets where the firm discloses or the firm tailors disclosures to the local market conditions T. As such, the decision variable of the firm is $d \in \{U, T\}$.

Since investors evaluate the disclosures in their market to determine prices for the firm, market price is a function of disclosure. In cases where the firm closely follows the local norms and expectations from investors, reducing the information processing costs for the local market (Blankespoor et al., 2020), the value of the firm will be higher. In markets where disclosure is different from investor expectations or norms in that market, firm valuations will be lower. This implies that firm price in a market is the base value of the firm plus a function of disclosure such that

$$P_j(d) = V + B_j(d) \quad (1)$$

where $B_j(d)$ is the benefit to the firm in terms of valuation increase driven by disclosing in a manner easily interpretable by the market participants. Note that the highest market valuation will occur when the firm fully tailors its disclosure to local market conditions. In other words, the highest valuation in the local market occurs when

$$B_j(T) = b_j$$

If instead the firm chooses to not tailor disclosures to the local market, then firm valuation will be

$$B_j(U) = \delta_j b_j$$

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examining foreign filings, their processing costs for this new information would be very high since foreign disclosures will not be tailored to reduce their information processing costs.

such that

$$0 \leq \delta_j \leq 1$$

In this case, the term δ_j determines how close the uniform disclosure meets the needs of the local market. In cases where the uniform disclosure is close to what local market participants wish to see, δ_j is close to unity and the firm has few incentives to tailor its disclosures. In contrast, if the local market has unique requirements that are significantly different from other markets, the δ_j term may be close to zero. In this case, the firm will have a larger discount by not tailoring its disclosures to the local requirements.

The firm trades in multiple markets with weight w_j for each market such that:

$$\sum_{j=1}^{J} w_j = 1$$

This implies that the total value of the firm is a function of the price in each market P_j times the weight in each market w_j. Thus, the total value of the firm can be written as:

$$MV(d) = \sum_{j=1}^{J} w_j P_j(d) \tag{2}$$

The firm's objective function is to maximize (2), the sum of the market values in all the markets where the firm is traded, net of disclosure costs.

In preparing the financial statements for a firm, there are certain baseline costs that all public companies must pay. These costs include hiring accounting and legal staff, paying for accounting systems to track information, and hiring outside auditors to review financial statements. These costs are paid by all public firms even if they only have one set of financial disclosures. Thus, a firm with a uniform disclosure process will have disclosure costs of

$$C(U) = C_U$$

If instead, the firm chooses to tailor disclosures by market, the firm must pay an additional cost for the disclosures in different markets. This additional cost can be written as:

$$C(T) = C_U + K$$

where $K > 0$.[3]

The firm will choose to tailor financial disclosures as long as

$$MV(T) - C(T) > MV(U) - C(U)$$

or substituting, the firm will choose to tailor disclosures when

$$\sum_{j=1}^{J} w_j(V + b_j) - (C_U + K) > \sum_{j=1}^{J} w_j(V + \delta_j b_j) - C_U$$

This implies that firms will tailor their disclosures when

$$\sum_{j=1}^{J} w_j(1 - \delta_j)b_j > K \quad (3)$$

Equation (3) is interpreted as follows. Firms will tailor their disclosures when markets place a particularly high value on the uniqueness of their disclosures. This is quantified through a high

[3] Without loss of generality the cost to tailor could be a function of how many markets the firm tailors the financial statements in. This would imply that the costs would be $C(T) = C_U + JK$.

value for b_j. Firms are also more likely to tailor their disclosures when local investors place a particularly high discount rate to universal disclosures – ie., when δ_j is low. Firms will also tailor when a market is particularly important for them – ie., when w_j in market j is high. Finally, firms will tailor their disclosures when the cost of tailoring their financial disclosures, K is low.

3. Empirical Setup

3.1 Changes to Regulatory Requirements

One significant challenge in examining disclosures is that firms endogenously choose what disclosures will give the firm the highest value. Since investors are known to have significant processing costs in reading and evaluating firm disclosures (Blankespoor et al., 2020), it is logical to expect firms to optimize disclosures to reduce these costs. This suggests that in equilibrium, firms will make the exact disclosures that will maximize firm value. If tailoring disclosures in multiple markets, firms will try to report disclosures that meet the needs of shareholders within a specific market.

To overcome this challenge, we utilize an exogenous change in disclosure requirements dictated by regulators. Since regulators are unlikely to be driven by firm demand, it is reasonable to treat regulatory changes as exogenous. We focus on the 2023 change from the Financial Services Agency in Japan for several reasons. First. There are a significant number of Japanese firms that also trade in the US markets as ADRs. This suggests that we can easily compare Japanese-filed Securities Reports to US-filed annual reports (20-F) to look for differences between the reports. Note that annual reports in Japan are called Securities Reports, a term we utilize throughout the paper. Second, the 2023 shock required firms to create a new section on sustainability in their Japanese filings, but had no impact on disclosure in US markets. In addition, US markets have traditionally been uninterested in sustainability and related topics (Baker, Egan, and Sarkan, 2024). This implies that US disclosures will typically have limited information disclosed about sustainability relative to firms reporting in other jurisdictions such as Europe. Finally, this shock was largely unanticipated by markets and unlikely to be contaminated by other events. This makes this particular shock to disclosure a good way to examine the spillover effects of disclosure requirements in Japan and the firm tailoring of financial disclosures.

The new 2023 FSA rule requires firms to create a new section in their Securities Reports titled "Approach to Sustainability and Related Efforts." This section is required to report information about the firm governance, strategy, risk management, and metrics and goals. The FSA requirement explicitly refers to these four topics which should be discussed in detail in the Securities Reports (Financial Services Agency of Japan, 2023). The Japanese terms for these disclosure requirements are reported in Appendix 1. Because the disclosure requirement explicitly calls for disclosure of these particular terms, this allows us to track how the use of these particular terms changes from before to after the 2023 disclosure requirements.

If this shock to Japanese sustainability disclosure leads to comparable increases in US sustainability disclosure, this would suggest that firms are not tailoring their financial filings, but that there is significant spillover in disclosure requirements. The prior literature has shown that US investors are less interested in disclosures related to sustainability and are less likely to be willing to pay for these disclosures (Chaieb, Errunza, & Lu, 2024). This suggests that firms may have incentives to comply with Japanese disclosure regulations requiring additional sustainability disclosures in Japanese markets, but that they may tailor their disclosures in US markets, not discussing these topics. If some firms have an increase in sustainability disclosure while others have limited changes in their US filings, this suggests that there is heterogeneity in the drivers causing firms to tailor their disclosures across countries.

3.2 Sample Selection

Since we need to examine firms with securities filings in the US and Japan, we begin by examining ADRs (American depository receipts) filed in the US. We search the CRSP/COMPUSTAT combined database for companies filing ADRs in the US that are incorporated in Japan. We confirm each firm also files an annual report (20-F) in the US by searching the EDGAR database to confirm the presence of annual filings around the 2023 change in Japanese regulations. For each firm in the sample, we then search the EDINET database at the Tokyo Stock Exchange to get the Securities Report for the firms. Missing filings are obtained from firm websites as well. We retain only firms with at least four years of filings in the US and in Japan for our sample of firms. This leads to a final sample of 11 companies and 60 Securities Report filings in Japanese and 60 20-F filings in English. Table 1 reports the names of the 11 companies in our sample with shares traded both on the Tokyo Stock Exchange and in the US through ADRs.

3.3 Summary statistics

Table 2 reports the summary statistics for the firms on our sample. We find that the mean firm in our sample has total assets of ¥83.4 trillion and 2.9 billion shares outstanding. When creating ADRs, firms may combine multiple shares into one ADR. For instance, Toyota has 10 shares per ADR share where Sumitomo Mitsui has 0.2 shares per ADR. The mean number of shares per ADR in the sample is 1.47. We find that the mean firm has 2.22% of its shares trading in the US market through an ADR. Finally, the average firm repurchases 5.23% of its shares outstanding in the prior year.

4. Results

4.1 Sustainability word frequency

We begin by examining filings for each of the firms in our sample from the period in which the 2023 FSA sustainability requirement is binding. In Figures 1 and 2 we show two particular firms to be representative of the ways in which firms may choose to comply with the FSA requirements. First, we examine Toyota's 2023 Japanese annual report translated into English using ChatGPT and Toyota's US filing in the same year. The FSA requirement obligates firms to create a new section in their Japanese annual report giving information about their approach to sustainability and the related effects. However, this requirement is not binding on any disclosures outside of Japan. As such, firms may choose to incorporate none, some, or all of the new information in their new filings.

In Figure 1 we can see that Toyota's 2023 Japanese filing contains the required section specifically about sustainability. The beginning of this section is labelled as 1J. In the US filing, there is a corresponding label 1U that shows almost a 1:1 correspondence between the Japanese and US filing. Moving to labels 2J, 3J, and 4J, we can see the discussion of sustainability and governance as required by the FSA regulation. Comparing these labelled sections in the Japanese filing to the US filing labels 1U, 2U, 3U, and 4U, we can see almost a direct correspondence between the US and Japanese filings for Toyota. This suggests that Toyota is following nearly an identical disclosure strategy in Japanese and US filings, meaning that Toyota does not significantly tailor their disclosures. When the regulation for sustainability is binding for the firm in its 2023 Japanese filing, the firms copies this disclosure almost verbatim into its US filing and discloses the same information.

Next we conduct a similar comparison for the 2023 filings for Takeda in the Japanese and US markets in Figure 2. As in Toyota's Japanese filing, we find a new section in the filing specifically devoted to sustainability as shown in lines 1J-4J. This section seems to comply with the FSA regulation, including sections on governance and subsequent sections, as laid out in the FSA requirement. Searching for sustainability in the US filing shows limited use of this term in the annual report. We highlight the section in the US filing closest to the text in 1U, showing that there are significant differences between the Japanese filing and the US filing. This suggests that unlike Toyota, Takeda is tailoring its disclosure based on the local US desires or needs of the market.

To conduct a robust empirical analysis, we utilize a keyword-based search for the terms listed in the 2023 FSA requirement: sustainability, governance, strategy, risk management, metrics, and goals. We search for the Japanese terms in the Japanese filings and the English terms in the US filings in each year from 2019-2024. Appendix 1 gives the original Japanese words and the English translations. This allows us to examine pre-adoption changes in word use, if firms anticipated changes in disclosure requirements as well as showing an additional post-event year to ensure that firms are fully compliant with the new FSA requirement.

In Table 3 Panel A we tabulate the frequency of sustainability words in Japanese filings. We find, for instance, that in 2019, firms used the word sustainability only 3.8 times in the average Securities Report. The use of the word "sustainability" increased gradually until 2022 where it jumped to 27.0. This is likely in anticipation of the regulatory change to be put in effect starting in 2023. We see similar trends in the terms required by the 2023 FSA sustainability requirement. For instance, we see that the word strategy went from being used 39.4 times in 2019 to being used 64.9 times in 2022. We find small increases for the terms "Risk management" and "Metrics" since they were already commonly used terms in 2019. On the whole, the results tabulated in Table 3 Panel A suggest that the 2023 FSA Sustainability requirement resulted in firms disclosing significantly more information specifically about sustainability, governance, strategy, and Risk management. At the same time, the evidence is somewhat weaker showing that firms increased disclosures regarding metrics and goals after the new disclosure requirements.

In Table 3 Panel B we examine the US annual reports (20-F) for the same firms in the same years. For instance, we find that the term "sustainability" was used on average 3.1 times in 2019. Use of this term gradually increases up until 2024 when it is used 30.1 times in the average filing. This implies that the Japanese regulation also had an impact on the US disclosures of these firms. We find similar trends for the other terms. Only the words metrics and goals seem to show limited evidence of a trend in the frequency of word use.

In Figure 3 we report the total sum of all six words and their frequency in Japanese and US filings. The figure shows a general upward trend from 2019-2024, suggesting that these words were becoming more common throughout this time period. At the same time, there is a distinctive increase in the number of sustainability words in 2023 in Japan, consistent with firm compliance with the 2023 FSA regulations. For instance, in Japan we show that the total word count goes from 159.5 in 2019 to 269.9 in 2023. This result suggests that the new regulation has a significant impact on the words used in filings. Examining the frequency of all words for US filers, we find that the US filings also have a significant upward trend from 111.7 in 2019 to 195.5 in 2024. This suggests that the US filings were also influenced by the Japanese regulations.

It is important to note, however, that the increase in sustainability word usage from 2019-2023 is larger in Japan than the US. This is consistent with the influence of Japanese regulations on US filings.

One possible interpretation of sustainability word use in Japanese filings in Table 3 panel A and US filings in Panel B is that Japanese filings were simply translated to English and then reported in firm 20-F filings. To test for this, we report in Table 3.C the difference between Japanese filing and US filing word count over time. This allows us to see if the word counts show similar trends suggesting that all filings are identical translations. This would imply that firms are not modifying their disclosures in the US markets, but are simply reporting the same information in Japanese and US markets.

In Table 3 Panel C we see that for various reasons some terms are used significantly more commonly in US compared to Japanese filings. For instance, in 2019, the term “Governance” is used 10.8 times more often in US than in Japanese filings. Likewise, the word “Risk management” is used 14.9 times more often in US filings. In contrast, the words “Strategy,” “Metrics,” and “Goals” are all more common in Japanese filings. What we are most interested in is the increase in the use of these words in Japanese versus US filings. If the total use of words in the final row is constant from 2019 – 2024, then the increase in word usage is similar across both countries. In 2019, we see the sustainability words are used 38.2 times. This figure increases significantly over time with the largest increase from 2021 to 2022, suggesting that Japanese firms are increasing the use of these words more in their Japanese filings than in the US filings. This suggests that at least some firms are tailoring their filings rather than simply translating their disclosures to English and reporting the same information in their US and Japanese filings.

4.2 Multivariate regressions

Thus far, we have shown a general trend in the use of the sustainability words in the 2023 FSA requirement for both Japanese and US filings. However, Figures 1 and 2 show some heterogeneity in how firms treat their disclosures. We now proceed to a multivariate regression setting to test the specific implications of our model. Specifically, the model suggests that firms more dependent on the US markets (high w_j in our model) will be more likely to tailor their disclosures to meet the requirements of this market. In addition, firms with lower costs (K in our model) for tailoring financial disclosures will be more likely to modify disclosures across markets. Unfortunately, our approach does not allow us to test the discount US investors may place on receiving sustainability information δ_j. This is because the investor discount is market dependent and all firms trade in both the US and Japanese markets. However, we are able to examine firm-specific drivers of tailoring financial disclosures using a multivariate setting.

In Table 4 we use the difference in the word count difference of words in the FSA requirement for the Japanese filings and US filings, similar to Table 3 Panel C. We conduct a multivariate regression with this word count difference as the dependent variable. This allows us to control for other important covariates such as the ADR size or the number of shares repurchased. We also control for firm size as this is correlated with the complexity of the firm and like corresponds to the difficulty firms will have in tailoring their financial disclosures (Hoitash and Hoitash, 2018).

Our results in Table 4 model 1 suggest that large firms have a smaller difference between their Japanese and US filings. This could be because larger firms have more complex filings and tailoring their filings is more challenging for larger firms. Likewise, we find that firms conducting more share repurchases have a smaller difference between the Japanese and US filings. Importantly, firms with a larger ADR have a higher difference between their sustainability word usage in Japanese versus US filings. This is supportive of the model, suggesting that firms highly dependent on US markets are more likely to tailor their financial disclosures. Finally, we find that the post 2023 indicator variable is positive and statistically significant (t-stat = 3.56), suggesting that firms have a larger increase in their sustainability word usage in their Japanese filings compared to their US filings. While the generate trend of increase in sustainability words shown in Figure 3 suggests that these words are more common across all filings, this result suggests that Japanese filings utilize these words at significantly higher rates compared to US filings for the same firms in the same years. This suggests that unlike the Toyota case documented in Figure 1, at least some firms do not copy their Japanese disclosures directly and file the same information translated into English.

The results shown thus far indicate that at least some firms do tailor their disclosures, increasing their sustainability reporting in Japanese markets but not in US markets after the 2023 FSA regulation. However, the model suggests that these results should be driven by firm-specific characteristics. For instance, firms with a high cost to tailor disclosures K should conduct less disclosure tailoring compared to firms with lower costs to tailor disclosures. In model (2) we repeat our analyses using firm total assets as a proxy for the costs to tailor disclosures. Hoitash and Hoitash (2018) show that firm size is a good proxy for firm accounting complexity, suggesting that larger firms should have higher costs in tailoring their accounting disclosures. We show in model (2) that an interaction term between post 2023 and firm size is insignificant, inconsistent with the model. It is also plausible that the firm size is simply a poor proxy for the costs of tailoring disclosures.

The theoretical model also suggests that the relative importance of the market will also play a key role in the decision to tailor disclosures. This suggests that as firm exposure to the US market increases (w_j in the model) the firm is more likely to tailor its disclosures after the 2023 FSA regulatory change. In model (3) we examine the interaction between post 2023 x ADR size and find a positive and statistically significant value (t-stat = 2.30). This suggests that the importance of the US ADR market is a significant determinant of disclosures in the US. When firms are more dependent on the US ADR market as measured by the size of their ADR exposure, they disclose less sustainability information in the US market.

Next we repeat our analyses for each of the individual six words in the FSA 2023 regulator change. We report this information in Table 5 Panel A and B. The results in Table 5 Panel A show that the increase starting in 2023 is driven by increases in the terms Goals and Metrics (models (5) and (6)). However, Table 5 Panel B allows us to consider the heterogeneity of the firms in our sample since some firms have large ADRs (high US exposure) and other firms have small ADRs (low US exposure). The results in Table 5 Panel B suggest that the significant drivers for firms with high US exposure are the changes in the words “sustainability” and “risk management.” These results support the conjecture that firm disclosures in Japanese markets of these terms are higher compared to the same firm’s disclosure in their US filings, consistent with the firms tailoring their disclosures.

5. Conclusions

In this paper we consider the spillover effects of financial regulation and the tailoring by firms of their financial disclosures. Where the prior literature (Naughton et al, 2018) has shown that intervention by regulators, as measured by SEC comment letters, has significant spillover effects, there has been no test of the spillover effect of new regulations. We develop a model to determine how firms choose to comply with regulatory requirements. Do they comply with each jurisdictional requirement independently, or do they create one unified disclosure in all markets, allowing them to save significant costs in the disclosure process? Our results show that following a regulatory change, some firms disclose nearly identical disclosures across the US and Japan. These companies tend to be those with smaller exposure to US financial markets. In contrast, firms with high exposure to US markets tend to tailor their financial reporting to the local financial markets.

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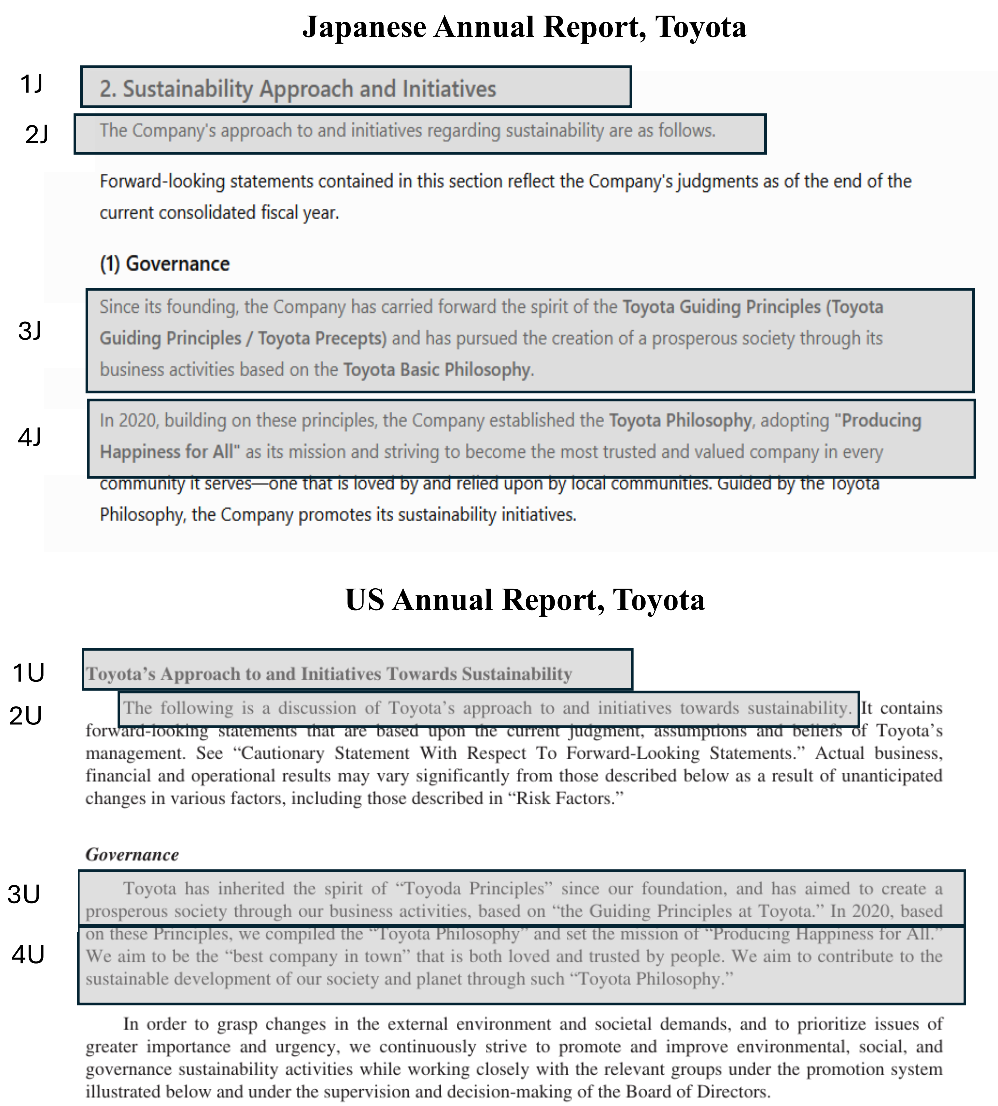

Japanese Annual Report, Toyota

1J **2. Sustainability Approach and Initiatives**

2J The Company's approach to and initiatives regarding sustainability are as follows.

Forward-looking statements contained in this section reflect the Company's judgments as of the end of the current consolidated fiscal year.

(1) Governance

3J Since its founding, the Company has carried forward the spirit of the **Toyota Guiding Principles (Toyota Guiding Principles / Toyota Precepts)** and has pursued the creation of a prosperous society through its business activities based on the **Toyota Basic Philosophy**.

4J In 2020, building on these principles, the Company established the **Toyota Philosophy**, adopting **"Producing Happiness for All"** as its mission and striving to become the most trusted and valued company in every community it serves—one that is loved by and relied upon by local communities. Guided by the Toyota Philosophy, the Company promotes its sustainability initiatives.

US Annual Report, Toyota

1U **Toyota's Approach to and Initiatives Towards Sustainability**

2U The following is a discussion of Toyota's approach to and initiatives towards sustainability. It contains forward-looking statements that are based upon the current judgment, assumptions and beliefs of Toyota's management. See "Cautionary Statement With Respect To Forward-Looking Statements." Actual business, financial and operational results may vary significantly from those described below as a result of unanticipated changes in various factors, including those described in "Risk Factors."

Governance

3U Toyota has inherited the spirit of "Toyoda Principles" since our foundation, and has aimed to create a prosperous society through our business activities, based on "the Guiding Principles at Toyota." In 2020, based

4U on these Principles, we compiled the "Toyota Philosophy" and set the mission of "Producing Happiness for All." We aim to be the "best company in town" that is both loved and trusted by people. We aim to contribute to the sustainable development of our society and planet through such "Toyota Philosophy."

In order to grasp changes in the external environment and societal demands, and to prioritize issues of greater importance and urgency, we continuously strive to promote and improve environmental, social, and governance sustainability activities while working closely with the relevant groups under the promotion system illustrated below and under the supervision and decision-making of the Board of Directors.

Figure 1. This figure shows a comparison of part of the sustainability disclosure section as reported in the Japanese and the US annual report for Toyota in 2023. The Japanese annual report is translated using ChatGPT. Highlighted sections of both reports show the sections discussing sustainability in the Japanese and US filing.

Japanese Annual Report, Takeda

1J 2. Sustainability Approach and Initiatives

2J Governance

3J The Company's **Board of Directors** is responsible for overseeing the Company's operations, including matters related to business risks and financial disclosures. The Board has delegated certain decision-making authority to the Company's executive management.

4J Members of the **Takeda Executive Team (TET)**, which consists of the President and Chief Executive Officer (President & CEO) and the executives responsible for overseeing each function across the Takeda Group, make decisions on significant matters through designated executive-level committees, including the **Business & Sustainability Committee (BSC)** and the **Risk, Ethics & Compliance Committee (RECC)**.

The **Business & Sustainability Committee (BSC)** is responsible for overseeing the Company's business strategy, including sustainability, as well as related objectives and commitments.

The **Risk, Ethics & Compliance Committee (RECC)** is responsible for overseeing and making decisions regarding the Company's **Enterprise Risk Management (ERM)** program and **Global Monitoring Program**, including measures to mitigate significant risks.

The **Board of Directors** receives regular updates from the President & CEO, other members of the Takeda Executive Team, and the various executive committees.

US Annual Report, Takeda

1U ***We may experience difficulty implementing and resourcing corporate sustainability-related measures, or complying with emerging sustainability-related requirements and expectations.***

Governmental and regulatory authorities, counterparties such as suppliers, investors, the public at large and others have increasingly focused on sustainability, with new laws and regulations regarding such matters increasing in number and scope. This includes new public reporting obligations such as the European Union's Corporate Sustainability Reporting Directive (CSRD), the SEC's final climate risk disclosure rules (currently stayed) as well as new sustainability disclosure rules expected to be adopted by Japan's Financial Services Authority. These emerging requirements, as well as other laws and regulations such as the EU's Corporate Sustainability Due Diligence Directive, could increase costs associated with our business operations, including the allocation of additional staffing and other resources and exposure to regulatory, litigation and reputational risk.

Figure 2. This figure shows a comparison of part of the sustainability disclosure section as reported in the Japanese and the US annual report for Takeda in 2023. The Japanese annual report is translated using ChatGPT. Highlighted sections of both reports show the sections discussing sustainability in the Japanese and US filing.

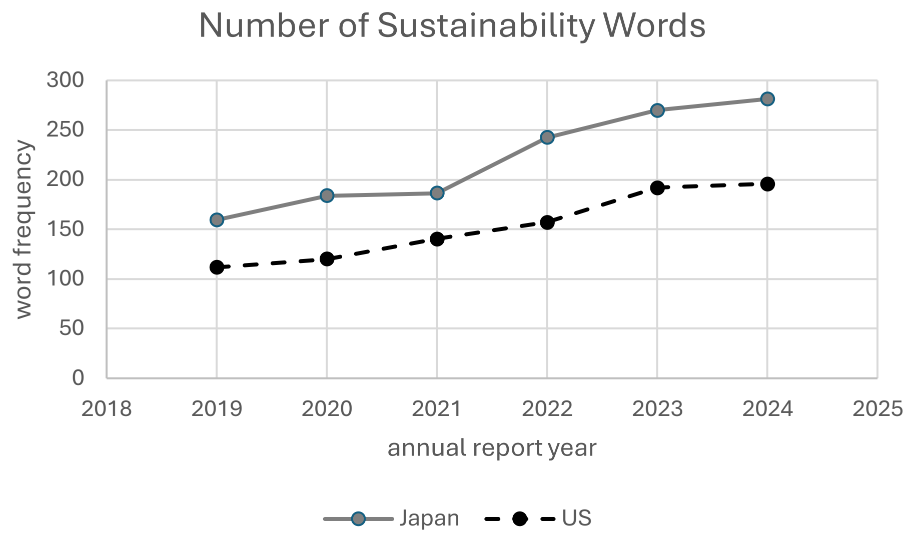

Figure 3. This figure shows the frequency of sustainability word usage in the US and Japanese annual filings for six words in the 2023 FSA sustainability regulation tabulated in Appendix 1. The sample collects information from 11 companies with annual reports filed in Japan and 20-F filings for their US-based ADRs. We collect data from 2019-2024 to examine the pre and post-period disclosure of sustainability information.

Table 1. Sample Companies

This table reports the 11 companies with annual reports filed in Japan and 20-F filings for their US-based ADRs. We collect data from 2019-2024 to examine the pre and post-period disclosure of sustainability information.

Japanese Company
Canon Inc
Honda Motor Company
Medirom Heathcare Technologies Inc
Mistubishi UFJ Financial
Mizuho Financial Group
Nomurea Holdings Inc
Orix Corp
Sony Group Corporation
Sumitomo Mitsui Financial Group
Takeda Pharmaceutical Co LTD
Toyota Motor Corp

Table 2. Sample Characteristics

This table reports sample characteristics for the 11 companies with annual reports filed in Japan and 20-F filings for their US-based ADRs. We collect data from 2019-2024 to examine the pre and post-period disclosure of sustainability information.

	Mean	**Median**	**Std dev**
Total assets (T ¥)	83.44	18.12	138.93
Shares out (B)	2.98	1.42	3.92
ADR ratio	1.47	1.00	1.41
ADR share/JP share	2.22%	2.62%	2.23%
Shares repurchased	5.23%	4.00%	5.18%

Table 3. Sustainability word frequency, Japanese and US Financial Reports

In this table we show the word count for six key words from the 2023 FSA sustainability disclosure requirement: sustainability; governance; strategy; risk management; metrics; goals. In Panel A we tabulate the frequency of the Japanese terms in the Japanese filings. In Panel B we tabulate the frequency of the English terms in the US filings. In Panel C we report the difference between the word count in Japanese filings minus the word count in US filings.

Panel A. Frequency of sustainability words in Japanese filings around 2023 regulatory change

	2019	2020	2021	2022	2023	2024
Sustainability	3.8	8.4	11.0	27.0	30.0	34.8
Governance	21.3	23.4	22.6	26.1	30.2	31.6
Strategy	39.4	41.5	43.9	64.9	64.2	65.5
Risk management	42.5	45.7	43.6	42.9	49.5	42.2
Metrics	29.4	37.3	33.8	39.4	49.5	57.3
Goals	23.1	27.6	31.5	42.1	46.5	49.9

Panel B. Frequency of sustainability words in US filings around 2023 regulatory change

	2019	2020	2021	2022	2023	2024
Sustainability	3.1	5.5	11.4	21.0	30.1	31.1
Governance	29.9	31.0	33.6	34.6	38.5	40.4
Strategy	22.5	23.1	23.3	26.5	33.4	35.7
Risk management	52.3	55.3	66.1	68.3	78.8	77.3
Metrics	0.5	1.3	1.7	2.3	4.3	4.0
Goals	3.4	3.7	4.4	4.5	6.9	7.5

Panel C. Frequency difference, Japanese filings – US filings (Panel A – Panel B)

	2019	2020	2021	2022	2023	2024
Sustainability	0.4	2.3	-0.4	6.0	-0.1	3.7
Governance	-10.8	-9.8	-11.0	-8.5	-8.3	-8.7
Strategy	15.3	16.8	20.6	38.5	30.8	29.8
Risk management	-14.9	-15.0	-22.5	-25.4	-29.4	-28.3
Metrics	28.8	35.9	32.1	37.1	52.7	53.3
Goals	19.4	23.5	27.2	37.6	39.5	42.5

Table 4. Multivariate regressions of sustainability word frequency

In this table reports coefficients from a multivariate regression where the dependent variable is the sustainability word count for Japanese filings minus the sustainability word count for US filings. The six key words from the 2023 FSA sustainability disclosure requirement: sustainability; governance; strategy; risk management; metrics; goals. Firm size is measured as the log of total assets, shares is the number of shares outstanding, ADR size is the percent of firm value in the US market relative to the total firm market capitalization. Post 2023 is a dummy variable that takes a value of one if the annual report is filed started in March 2023. t-statistics are reported below the coefficients and *, **, and *** indicate significance at the 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)
Firm size	-0.42***	-0.45***	-0.42***
	(4.87)	(4.54)	(5.08)
Shares	-6.75***	-6.74***	-6.89***
	(2.92)	(2.90)	(3.09)
ADR size	7.24*	7.24*	2.38
	(1.94)	(1.93)	(0.57)
Post 2023	74.64***	63.24**	-4.86
	(3.56)	(2.36)	(0.12)
Post 2023 x Firm size		0.11	
		(0.62)	
Post 2023 x ADR size			17.67**
			(2.30)
N	60	60	60
Adj R^2	41.85	41.19	46.06

Table 5. Multivariate regressions of sustainability word frequency be individual words

In this table reports coefficients from a multivariate regression where the dependent variable is the sustainability word count of individual words for Japanese filings minus the sustainability word count for US filings. The six key words from the 2023 FSA sustainability disclosure requirement: sustainability; governance; strategy; risk management; metrics; goals. Firm size is measured as the log of total assets, shares is the number of shares outstanding, ADR size is the percent of firm value in the US market relative to the total firm market capitalization. Post 2023 is a dummy variable that takes a value of one if the annual report is filed started in March 2023. t-statistics are reported below the coefficients and *, **, and *** indicate significance at the 10%, 5%, and 1%, respectively.

Panel A. Word frequency regression considering changes after the FSA requirement

	(1)	(2)	(3)	(4)	(5)	(6)
Word frequency	Sustainability	Governance	Strategy	Risk Management	Metrics	Goals
Firm size	-0.03*	-0.07***	-0.07***	-0.28***	0.04	-0.01
	(1.86)	(5.24)	(3.07)	(9.66)	(0.93)	(0.41)
Shares	-0.55	-2.11	-3.98	1.56	-0.90	-0.76
	(1.26)	(5.94)	(6.84)	(1.97)	(0.78)	(1.34)
ADR size	1.23*	0.59	0.92	-2.67**	3.98**	3.20***
	(1.73)	(1.02)	(0.98)	(2.09)	(2.12)	(3.49)
Post 2023	5.64	3.60	10.05*	-0.43	30.97***	24.81***
	(1.41)	(1.12)	(1.91)	(0.06)	(2.95)	(4.83)
N	60	60	60	60	60	60
Adj R^2	9.73	44.42	44.47	66.61	14.19	35.68

Panel B. Word frequency regression considering changes after the FSA requirement controlling for ADR size

	(1)	(2)	(3)	(4)	(5)	(6)
Word frequency	Sustainability	Governance	Strategy	Risk Management	Metrics	Goals
Firm size	-0.03**	-0.07***	-0.07***	-0.28***	0.04	-0.01
	(2.01)	(5.27)	(3.11)	(9.97)	(0.91)	(0.41)
Shares	-0.58	-2.12***	-4.00***	1.51**	-0.93	-0.77
	(1.41)	(5.99)	(6.93)	(1.97)	(0.80)	(1.34)
ADR size	0.12	0.18	0.17	-4.18**	3.13	2.95***
	(0.16)	(0.28)	(0.16)	(2.90)	(1.43)	(2.76)
Post 2023	-12.48*	-2.95	-2.21	-25.07*	17.02	20.83**
	(1.68)	(0.46)	(0.21)	(1.82)	(0.81)	(2.03)
Post 2023 x ADR size	4.03**	1.46	2.73	5.48**	3.10	0.88
	(2.82)	(1.19)	(1.37)	(2.07)	(0.77)	(0.45)
N	60	60	60	60	60	60
Adj R^2	19.84	44.84	45.34	68.49	13.56	34.73

	(1)	(2)	(3)	(4)	(5)	(6)
Word frequency	Sustainability	Governance	Strategy	Risk Management	Metrics	Goals
Firm size	-0.03*	-0.07***	-0.07***	-0.28***	0.04	-0.01
	(1.86)	(5.24)	(3.07)	(9.66)	(0.93)	(0.41)
Shares	-0.55	-2.11	-3.98	1.56	-0.90	-0.76
	(1.26)	(5.94)	(6.84)	(1.97)	(0.78)	(1.34)
ADR size	1.23*	0.59	0.92	-2.67**	3.98**	3.20***
	(1.73)	(1.02)	(0.98)	(2.09)	(2.12)	(3.49)
Post 2023	5.64	3.60	10.05*	-0.43	30.97***	24.81***
	(1.41)	(1.12)	(1.91)	(0.06)	(2.95)	(4.83)
Post 2023 x Firm size	60	60	60	60	60	60
	9.73	44.42	44.47	66.61	14.19	35.68
Post 2023 x ADR size	-0.03*	-0.07***	-0.07***	-0.28***	0.04	-0.01
	(1.86)	(5.24)	(3.07)	(9.66)	(0.93)	(0.41)
N	-0.55	-2.11	-3.98	1.56	-0.90	-0.76
Adj R^2	(1.26)	(5.94)	(6.84)	(1.97)	(0.78)	(1.34)

Appendix 1. Key Sustainability terms

This table reports key terms in the January 31, 2023 disclosure requirements by the Financial Services Agency starting with all Securities Reports files after March 31, 2023. The Japanese terms come directly from the FSA filing. English translations are provided by ChatGPT. Japanese Securities Reports were searched for a count of the Japanese term and US Annual reports (20-F filings) were searched for the English translation of the Japanese term.

Japanese term	**English translation**
サステナビリティ	sustainability
ガバナンス	governance
戦略	strategy
リスク管理	risk management
指標	metrics
目標	goals