Do firms with strong commitment to corporate social responsibility prefer less frequent financial reporting? Evidence from eliminating mandatory quarterly financial reporting in Europe

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Abstract

This study examines whether corporate commitment to CSR and sustainability affects firms' choice of financial reporting frequency. Specifically, we examine whether firms with superior CSR performance and commitment to sustainability choose to abandon quarterly financial reporting voluntarily following the reporting regime change in Europe in 2013. We argue that corporate commitment to CSR and sustainability symbolizes a firm's orientation towards long-term investments and management disapproval of short-termism. As such, firms with strong commitment to CSR would reduce financial reporting frequency to avoid undesired pressure from short-term oriented investors. Using a sample of the London Stock Exchange (LSE) listed companies, we find that firms with superior CSR commitment are more likely to abandon the quarterly Interim Management Statement (IMS) voluntarily following the change in the U. K's Disclosure and Transparency Rules in 2014. Further analysis reveals that firms with superior CSR commitment do not experience increased information asymmetry following the abandonment of quarterly reporting. We find limited evidence that such firms are more likely to increase capital spending in later periods. Our results are robust to different specifications and controls for firm characteristics known to affect firms' financial reporting decision. Overall, the evidence in this study is consistent with the argument that corporate commitment to CSR symbolizes a firm's long-term investment focus and management orientation towards sustainability affects firms' choice of financial reporting frequency.

I. Introduction

One key issue that concerns the accounting profession and policy makers alike is the frequency with which public companies should report financial information to investors. A large number of accounting studies show that more frequent financial reporting tends to reduce information asymmetry, hence the cost of capital and bid-ask spread (Stoumbos 2017).[1] Existing research supports more frequent financial reporting purporting to the conventional wisdom that more information is preferred to less. One common premise underlying the existing studies is that financial reporting frequency (decision) affects investors' behavior and stock price but it does not influence firms' investment decision. Recent theoretical studies reveal, however, that financial reporting frequency may induce management short-termism by engaging in negative net present value projects when shareholders are sufficiently impatient (Gigler et al. 2014, Jiang and Zhang 2016). These studies suggest that financial reporting frequency may have real economic consequence as it may affect management investment decision. One important implication of these studies is that firms with commitment to long-term sustainability may favor a less frequent financial reporting regime in order to mitigate undesired pressure from investors' short-termism.[2] Nonetheless, there is little empirical research that investigates whether a firm's orientation towards long-term sustainability affects their choice of financial reporting frequency.

Securities regulators are also concerned about how increasing mandatory financial reporting frequency may induce management myopia. Although the US and Canada require listed companies to report quarterly financial results, this practice is not the norm among other major stock exchanges in the world, such as in Hong Kong, China and European Union (EU). In particular, the EU amended the Transparency Directive in 2013 and abolished the requirement for listed companies to publish a quarterly Interim Management Statement. The

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[1] One could argue that increasing reporting frequency is tantamount to increasing reporting quality as investors can always ignore the additional disclosure (Verdi 2012).

[2] As an anecdotal evidence, see the CNN report about Indra Nooyi, former CEO of PepsiCo, requesting President Trump to eliminate quarterly financial reporting. https://money.cnn.com/2018/08/17/news/companies/trump-drop-quarterly-reports/index.html

amendment in 2013 specifically highlights regulators' concerns that mandatory quarterly reporting may induce management short-termism.

The UK Financial Conduct Authority (FCA) is among the first to adopt the new EU disclosure policy and it allows the public companies listed in the London Stock Exchange (LSE) to choose voluntarily whether to issue quarterly Interim Management Statements effective November 7, 2014.   The reactions to the new disclosure regime in the UK are swift.   The UK's biggest asset management firm, Legal and General Investment Management (LGIM), wrote to the UK's biggest 350 listed companies, urging them to ditch quarterly financial reports. LGIM's CEO Mark Zinkula was quoted as saying:

> "For many businesses, we believe, reducing the time spent on frequent reporting could help management to focus more on long term strategies and articulate more on market dynamics and innovation drivers that will enhance their performance over time."[3]

Similarly, National Grid, the £35bn electricity distributor, was the largest FTSE-listed company to abandon quarterly reporting following the UK's disclosure policy change. The company stated that the "long term" nature of its business meant that twice-yearly updates to investors at its half-year and full-year results were enough, and that quarterly reports could "feed short-termism" among investors.[4]

This study examines whether management orientation towards CSR motivates firms to abandon quarterly reporting practice following the change in the disclosure policy regime in Europe. We also explore whether abandoning quarterly financial reporting increases information asymmetry for capital market participants and whether firms with strong CSR commitment increase long term investments after abandoning quarterly financial reporting. We posit that corporate commitment to CSR and sustainability symbolizes long-term investment focus and management disapproval of short-termism. Corporate commitment to CSR and sustainability involves significant investments in employment equity, social justice and

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[3] http://www.cityam.com/217405/legal-and-general-calls-end-quarterly-financial-report
[4] https://www.cchdaily.co.uk/national-grid-pulls-plug-quarterly-reporting

environmental protection. Existing research suggests that CSR investments may build up firm specific, non-transferable intangible assets that lead to a sustainable competitive advantage in the long term and such investments may take time to translate into future financial success (Hart 1995, Clarkson et al. 2011). Hence, investors' short-termism is a negative force for corporate investments in CSR and long-term sustainability. To avoid feeding investors' short-termism, firms with strong commitment to CSR and sustainability are more likely to abandon quarterly financial reporting following the change in the disclosure policy in Europe. Since firms' true commitment to CSR and long-term sustainability is not directly observable, we use firms' CSR data from ASSET4 to develop our empirical proxy for firms' commitment to CSR and sustainability practice. Consistent with existing CSR literature in general management and business strategy, we argue that firms with strong commitment to CSR and sustainability may prefer less frequent financial reporting as a way to deter undesired pressure from short-term oriented investors. We hypothesize that firms with strong commitment to CSR are more likely to abandon quarterly reporting following the reporting regime change in Europe. Using a sample of 690 companies listed in the LSE, we find evidence consistent with this hypothesis. More importantly, we do not find evidence that investors and other capital market participants suffer from the reduced reporting frequency following the regime change. In addition, we find some evidence that firms with strong CSR commitment increased long-term investments after abandoning quarterly financial reporting. Our results are robust to different proxies for corporate CSR commitment, including compliance with Global Reporting Initiative standards and external assurance of CSR report.

The findings in this paper contribute to the existing literature in two ways. First, existing research on financial reporting frequency focuses on investors' short-termism and market myopia. There is limited empirical research on the impact of management orientation towards long-term investments on firms' financial reporting frequency. This study sheds light on how management's commitment to long-term sustainability may affect firms' choice of financial

reporting frequency. Second, there is a large research literature on how corporate CSR performance may affect the quality of accounting information, analyst behavior and audit risk (Cao et al. 2016, Dhaliwal et al. 2011, De Franco et al. 2015, and Li et al. 2015). There has been little research investigating how corporate commitment to CSR and sustainability affects a firm's long term investments and the perception of capital market participants about the firm's information environment. This study bridges the CSR performance literature and financial reporting frequency literature by examining how firms' long term commitment to sustainability affects firms' choice of financial reporting frequency and long term capital investments.

The paper is organized as follows. Section II reviews the research literature relevant to this study and develops the hypothesis. Section III provides institutional background about the quarterly reporting practice in the European Union and in the UK. Section IV discusses sample selection and research design and outlines the empirical models to be estimated. We discuss the results of the empirical analysis in Section V and Section VI concludes.

II.   Literature Review and Hypothesis Development

This study broadly relates to two strands of accounting research literature: the information disclosure literature and the CSR literature. The accounting disclosure literature reveals that managers have incentives to disclose good news information voluntarily while withholding bad news information up to a threshold when facing a proprietary cost for disclosure (Verrecchia 1983 and 2001).[5]   A large body of empirical accounting research shows consistent evidence that increased disclosure and high quality accounting information benefit investors and the reporting firms (Botosan 1997, Leuz and Verrecchia 2000, Welker 1995). Recent studies focus on how financial reporting frequency reduces information asymmetry and investor behavior (Stoumbos 2017). Fu et al. (2012) investigate the impact of voluntary quarterly reporting on information asymmetry and the cost of capital. Using a sample of US

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[5] See Li et al. (1995) for a review of voluntary disclosure literature.

firms from the period of 1951 to 1973, they find that firms that voluntarily provided interim financial reports during that period experienced reduced information asymmetry and lower cost of capital. Butler et al (2007) examine whether financial reporting frequency affects the speed with which accounting earnings news is impounded into the securities prices. Interestingly, they do not find evidence that mandatory increase in reporting frequency affects the timeliness of accounting information being reflected in the stock price. Only firms that voluntarily increased reporting frequency experienced increased timeliness.

Gigler et al. (2014) explore the cost-benefit tradeoff associated with greater reporting frequency using an analytical model. They show that reporting frequency affects firms' investment decision when investors are sufficiently short-term oriented, i.e. more interested in the current market price. Since firm's investment choices are not directly observable to investors, more frequent reporting will distort a firm's investment decision towards choosing short term investment projects, hence management short termism. The model helps explain how mandatory increase in reporting frequency may lead to management myopia and short termism.[6] One testable implication of the model is that firms with long-term strategic focus have little incentive to voluntarily engage in more frequent reporting when facing the market price pressure from short-term oriented investors. We are not aware of any empirical studies that test this empirical prediction directly.[7]

The CSR literature suggests that corporations should consider all stakeholders, not just shareholders, when making investment decisions, and doing so may enhance corporate long-term performance and sustainability (Hart and Ahuja 1996, McWilliams and Siegel 2000 and 2001, Orlitzky et al. 2003). Hart (1995) argues that corporate commitment to CSR will build firm specific intangible assets that cannot be easily imitated by other firms and such

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[6] Wagenhofer (2014) points out that the short termism in Gigler et al (2014) arises from shareholders' short-term objectives and managers play no role in the model (p. 393).

[7] Kim et al. (2017) investigate whether cessation of quarterly earnings guidance reduces investors' short-termism. They do not examine the impact of management orientation towards long-term sustainability on firms' choice of financial reporting frequency.

intangible assets represent a key source of sustainable competitive strategy in the market place. Research in general management and business strategy shows that firms committing to CSR and sustainability practice must focus on the long term because the market is incomplete in terms of pricing out corporate externalities in the areas of social and environmental performance. Practicing sustainability requires investments in social and environmental performance and such investments may not generate quick returns or gain immediate recognition in stock markets. To benefit from a sustainable competitive strategy based on CSR performance, firms need to continue to invest in firm specific, non-transferable capability (Clarkson et al. 2011).

This study bridges the above two strands of research literature and examines whether firms with commitment to CSR and sustainability choose to reduce financial reporting frequency by abandoning quarterly reporting voluntarily. We explore a unique institutional setting in Europe when the EU amended the Transparency Directive in 2013, abolishing the obligation for listed firms to publish interim reporting for the first and third quarters. Instead, firms can voluntarily report quarterly if they choose to. This reporting regime change creates an empirical setting to examine the impact of corporate commitment to long-term sustainability and CSR performance on firms' choice of financial reporting frequency. We argue that corporate commitment to CSR symbolizes a firm's strategic focus on long-term investments and management disapproval of short-termism. For these firms, increasing financial reporting frequency will only "feed short-termism" among investors and discourage long-term investments. To execute sustainable value creation and long-term oriented investment strategy, firms with strong commitment to CSR may prefer less frequent financial reporting to reduce short-term market price pressure and to give investors an incentive to adopt a longer-term investment horizon.[8] Hence, this study tests the following hypothesis stated in alternate form.

> H1: firms with strong commitment to CSR and long-term sustainability are
> more likely to abandon quarterly interim management statements following

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[8] Kim et al. (2017) find that cessation of quarterly earnings guidance actually leads to an increase in the ownership of long-term institutional investors in these firms.

the reporting regime change in Europe, ceteris paribus.

III. Institutional background

The European Union introduced the mandatory Interim Management Statement (IMS) when it passed Directive 2004/109/EC, more commonly known as the Transparency Directive (hereafter "TD") in December 2004. The TD intended to provide minimum transparency requirements and improve information transparency for investors across the European Union. Among other requirements, the TD required listed securities issuers to submit semi-annual condensed financial statements and Interim Management Statements for the first and third quarters beginning from January 2007. Schleicher and Walker (2015) provide a more complete review of the institutional details surrounding the implementation of the TD.

The TD required firms to file IMS for each half year between 10 weeks after the start of the half and 6 weeks before the end of the half year; i.e. for normal fiscal years, between weeks 10 and 20 and weeks 36 and 46 of the fiscal year end. The IMS should include "an explanation of material events and transactions that have taken place during the relevant period and their impact on the financial position of the issuer and its controlled undertakings, and a general description of the financial position and performance of the issuer and its controlled undertakings during the relevant period" (EC 2004/109/EC, Article 6.1). The requirements of Article 6 are relatively general, allowing filers to prepare a narrative description of material events and financial position and performance, without a requirement to file a set of financial statements, or for any financial information to be audited. Therefore, there is a significant range of content across various issuers' IMSs. Nonetheless, the Interim Management Statement must be filed in a quarterly interval, with the first IMS required to be released prior to filing of the half-year statements, and the second to be filed between the half-year statements and the full-year statements. Although IMS was not intended as an equivalent of quarterly reporting comparable to SEC registrants in the United States, the TD sought to bring issuers across the European Union to the same minimum reporting frequency: two sets of financial statements

and two interim management statements. The TD exempted firms in EU member states with mandatory quarterly reporting requirement (EC 2004/109/EC, Article 6.2). Relevant sections of the TD were to be enacted country-by-country; by each member state's relevant listing authority.

The TD included a built-in provision for the European Commission to assess the compliance with and effectiveness of interim management statements, with a deadline to revisit the IMS requirements in 2010 (EC 2004/109/EC, Article 6.3). The subsequent report of the EC Commission Report on the implementation of the TD (EC, 2010) found that compliance with disclosure requirements was generally high, but the economic effects were unclear. The review suggested that the EU consider simplification measures, including more flexible reporting deadlines and "alleviating the obligation" to publish quarterly financial information, namely IMS (EC, 2010, ¶10). The following 2013 amendment to the TD ("Transparency Directive Amending Directive", 2013/50/EU, hereafter TDAD), among other changes, abolished the requirement to publish IMS implemented in 2004. The TDAD 2013 specifically highlights the desire to remove the administrative burden for small- and medium-sized issuers, and the concerns about reducing investor short-termism and encouraging long-termism:

> "The obligations to publish interim management statements or quarterly financial reports represent an important burden for many small and medium-sized issuers whose securities are admitted to trading on regulated markets, without being necessary for investor protection. Those obligations also encourage short-term performance and discourage long-term investment. In order to encourage sustainable value creation and long-term oriented investment strategy, it is essential to reduce short-term pressure on issuers and give investors an incentive to adopt a longer-term vision" (EC 2013/50/EU, ¶4).

Member states were given until 6 November 2015 to remove the IMS provisions from their relevant regulations (EC 2013/50/EU, ¶4). In the UK, the Financial Conduct Authority (FCA)'s Disclosure and Transparency Rules (hereafter DTR) govern the publication of annual financial statements, semi-annual financial statements, and interim management statements (DTR §4.1, 4.2, and 4.3 respectively). The FCA chose to remove DTR 4.3 Interim Management Statements one year early, with effect from 7 November 2014. The UK thus presents an ideal

institutional setting to examine the post-IMS removal period as it adopted the regulation earlier than in other countries, and furthermore, it complied fully with the data collection provisions in the 2004 TD, allowing access to relevant filings data.

IV. Sample Selection and Research Design

4.1 Sample Selection and Data Sources

Under the TD, every country in the EU must have a mechanism to collect and store regulated filings. In the UK, all issuers subject to FCA regulations are required to submit their regulatory filings to the National Storage Mechanism (NSM), which is currently contracted out and managed by Morningstar.[9] The NSM is the UK's official system of collecting regulated information as required by the UK Listing Rules, the EU Transparency Directive, and Prospectus Rules. Securities issuers must additionally distribute their filings through an approved "information distribution firm" or provide evidence of their distribution efforts.[10] The largest of these services is the Regulatory News Service (RNS) of the London Stock Exchange. While Factiva and other databases include RNS-distributed filings, their coverage of filings is incomplete because use of the RNS service is not compulsory and firms may choose to use other providers. For completeness, we choose to obtain filings data for all interim management statements (hereafter "IMS") and trading updates (hereafter "TU") from the NSM.

Information in the NSM is classified at the point of submission into specific categories: quarterly reports, half-yearly statements, annual reports, interim management statements, and trading updates, among others. To identify IMS and TUs, we rely on the headline classification provided by the NSM, which is self-reported. Using the classifications provided by the NSM also reduces researcher misclassification which may result from trawling statements based on keywords. We obtain the list of all filings from the NSM between July 1, 2013 to June 30, 2016 with the classifications "interim management statement" or "trading statement." We manually

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[9] http://www.morningstar.co.uk/uk/NSM
[10] https://www.fca.org.uk/markets/ukla/regulatory-disclosures

matched firms with IMS or TU filings with Datastream codes to allow merging to our other data sources.

We obtain CSR data from the Asset4 ESG (Environmental, Social, and Governance) module in Thomson Reuters Datastream. The Asset4 ESG database covers the constituents of major market indices (e.g., S&P 500 and FTSE 350) since 2002. Thomson Reuters teams up more than one hundred analysts to collect ESG data from various public sources, including sustainability reports, annual reports, regulatory filings, news media, and company website, etc. We retrieve the three data items from Asset4, including CGVSDP026 (CSR Sustainability Reporting), CGVSDP028 (GRI Report Guidelines), and CGVSDP030 (CSR Sustainability External Audit).[11] In cases of missing values, we manually search the CSR information from company websites. We then develop the CSR indices reflecting a firm's preparation of a stand-alone CSR report, compliance with Global Reporting Initiative (GRI) guidelines on sustainability, and whether the firm has received external assurance on its CSR report. In addition, we obtain financial information from Thomson Reuters DataStream/Worldscope, information on analyst following from I/B/E/S International, and data on institutional ownership and management forecasts from Capital IQ.

Panel A of Table 1 reports the sample selection process. We start with 776 firms with IMS and TU filings available in the NSM database during the two fiscal years surrounding the effective date of the TD in November 2014. The half-year fiscal period covering the November 7, 2014 effective date of the rule is treated as the transitional period. Take the example of a firm with the fiscal year end in December. We classify the half-year period from July 2014 – December 2014 as transitional and exclude it from the empirical analysis. We classify first- and second-half IMS depending on the fiscal year-end of the issuer. For this December year-

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[11] Due to limited coverage of UK firms in Asset4 ESG database (279 out of 690 firms in the final sample), we do not use the overall CSR rating for our main analyses. Relying on more than 750 individual raw data points, the Asset4 ESG team evaluates firms by more than 250 Key Performance Indicators (KPIs). The KPIs are relative performance scores benchmarked against the whole company universe, with the values normalized (z-scored) to range between 0 and 100. The KPI scores are aggregated into eighteen categories under four pillars: Environmental Performance, Social Performance, Corporate Governance Performance, and Economic Performance. The Asset4's overall CSR rating is then calculated as the equal-weighted scores of the four pillars.

end firm, the pre-rule period is from July 2013 to June 2014 (with the first-half IMS and TU issued during January 2014 – June 2014 and the second-half IMS and TU issued during July 2013 – December 2013). Its post-rule period is from January 2015 to December 2015 (with the first-half IMS and TU issued during January 2015 – June 2015 and the second-half IMS and TU issued during July 2015 – December 2015). Figure 1 provides an illustrative timeline of classification for a firm with a December fiscal year-end. As another example, for a firm with the fiscal year end in September, the pre-rule period is defined as between October 2013 – September 2014, and the post-rule period from April 2015 – March 2016.

We then merge these IMS and TU filings with the financial information of LSE-listed firms in the DataStream/Worldscope database, and exclude 44 firms due to missing data at the beginning of the fiscal year corresponding to the post-rule period as specified above. We also exclude 42 firms that do not exist in both the pre- and post-rule period, because a balanced sample provides a more direct comparative analysis regarding the impact of the TD rule. Hence, the final sample consists of 690 firms listed on London Stock Exchange.

[Table 1]

4.2 Specifications of Regression Models

4.2.1 CSR and reporting frequency of IMSs and TUs

We use the following two regressions to investigate the impact of corporate commitment to CSR on firms' decision to issue IMSs and TUs following the TD rule.

$$NUM\_IMS = \alpha_0 + \alpha_1 CSR + Controls \qquad (1)$$

$$NUM\_TU = \alpha_0 + \alpha_1 CSR + \alpha_2 Lagged\ NUM\_TU + Controls \qquad (2)$$

In each equation, we employ both Poisson regression and negative binomial regression because the dependent variable is a count variable. Nonetheless, we also use OLS regression as a sensitivity check. In Equation (1), the dependent variable NUM_IMS is the number of IMSs issued in the post-rule period, taking on the values of zero (when firms issue neither the

first half IMSs nor the second half IMSs), one (when firms issue IMSs either in the first half or the second half), or two (when firms continue to issue IMSs both in the first half and the second half). It is equivalent to use the change in the number of IMSs issued from the pre- to post-rule period as the dependent variable, because all sample firms must issue two IMSs each year prior to the rule. We implement Equation (2) to explore whether firms increase TU disclosure as a substitute for IMS following the TD rule change. The dependent variable NUM_TU is the number of TUs issued in the post-rule period. Since the issuance of TUs is voluntary both before and after the TD rule, we include a lagged variable of NUM_TU to control for the number of TUs in the pre-rule period. As our variable of interest is the number of IMSs or TUs after the regulatory change, our regression sample for both (1) and (2) is composed of one observation per firm.

The independent variable of interest in both equations is the corporate social responsibility commitment as our proxy for management orientation towards long-term sustainability. We define the CSR commitment in two ways. The dummy variable CSR1 is equal to one if a firm issues a standalone CSR report, and zero otherwise. As a more refined measure of corporate CSR commitment, we consider sequential choice of a firm's CSR commitment starting with issuing a standalone CSR report, compliance with GRI reporting guidelines, and seeking external assurance for CSR reports. Each decision is contingent on the previous decision and represents an elevation of a firm's CSR commitment. Specifically, CSR2 is equal to four if a firm issues a standalone CSR report that is in compliance with GRI reporting guidelines and is assured by an external auditor, three if a firm issues a standalone CSR report that is either GRI-compliant or assured (but not both), two if a firm issues a standalone CSR report that is neither GRI-compliant nor audited, one if a firm provides limited CSR information either in a section of its annual report or on its website, and zero otherwise.

Panel B of Table 1 shows the distributions of two CSR variables. In our sample, 300 (43.48%) firms publish standalone CSR reports (CSR1 = 1). Within these firms, 60 (8.70%)

firms follow GRI guidelines and hire external auditor in preparation for the reports (CSR2 = 4); 102 (14.78%) firms publish their reports either with GRI-compliance or external audits (CSR2 = 3); and 138 (20.00%) firms' CSR reports do not have any additional quality assurance (CSR2 = 2). The remaining 390 (56.52%) firms do not prepare standalone CSR reports (CSR1 = 0), including 210 (30.43%) firms providing certain CSR information in a section of their annual reports or on their company websites (CSR2 = 1) and 180 (26.09%) firms without any CSR information disclosed (CSR2 = 0). We expect the coefficient on CSR to be negative in Equation (1), indicating that firms with stronger commitment to long-term sustainability issued fewer, or even no IMSs to mitigate short-termism after the adoption of the TD. We do not have prior expectations with respect to the impacts of CSR commitment on NUM_TU in Equation (2), which primarily depends on whether firms use TU as a substitute for IMS or have any material information for timely disclosure.

In line with Butler et al. (2007) and Link (2015), we consider a set of variables to control for firm and industry characteristics that could potentially influence frequency of voluntary reporting. We control for firm size (SIZE), defined as the natural logarithm of total assets. Firms subject to more severe information asymmetry can alleviate the problem by engaging in more frequent reporting. We use assets in place (ASSETSIP) as a proxy for investment opportunity set and information environment (Smith and Watts, 1992). ASSETSIP is equal to total assets divided by the sum of total liabilities and market value of equity. Higher frequency of financial reporting could serve as a monitoring device to mitigate agency problems (Jensen and Meckling, 1976). We use leverage ratio as a proxy for agency costs (Leftwich et al., 1981). LEV is defined as the sum of short-term debt and long-term debt, divided by total assets. Firms operating in concentrated industries tend to have higher proprietary costs, and are unwilling to report frequently (Harris, 1998). We control for industry Herfindahl Index (HERF), equal to the sum of squared market shares (based on sales) for each 1-digit ICB industry. In addition, low information transparency due to long operating cycle creates demand for more frequent

reporting. However, the increased reporting frequency could lead to noise in financial information, because of increased estimation errors in accounting accruals for firms with long operating cycle (Dechow and Dichev, 2002). We define operating cycle (OPCYC) as receivables divided by sales plus inventory divided by cost of goods sold, both divided by 360. We also control for firm performance, by including return on assets (ROA) and reported losses in the pre- and post-rule periods (LOSS_PRE and LOSS_POST). Firms cross-listed in the U.S. are required to publish quarterly reports in the U.S. markets, and are more likely to continue to issue IMSs without incurring additional reporting costs. We include CROSSLIST, equal to one if the firm cross-listed in the U.S., and zero otherwise. Furthermore, additional monitoring mechanisms, such as insider ownership, analyst following, and institutional ownership, could influence corporate reporting choices. CHELD is defined as the percentage of closely held shares. LN_ANALYST is the natural logarithm of the number of financial analysts following the firm (with the missing values set to zero). INSTOWN is the percentage of shares owned by institutional investors. Besides, management forecast is an additional channel of voluntary information disclosure, which may substitute or complement the issuance of IMSs and TUs. MF is equal to one if the firm issues management forecasts, and zero otherwise. Lastly, we control for industry (1-digit ICB) fixed effect when estimating our models.

4.2.2 Investment decisions after abandoning quarterly IMSs

To corroborate our argument that firms' CSR commitment symbolizes management disapproval of short termism and such firms may favor less frequent financial reporting, we further explore whether such firms also increase their capital investments after abandoning quarterly reporting. If the cessation of IMSs mitigates the undesired market pressure of investor short-termism, our hypothesis implies that firms with stronger commitment to long-term sustainability should increase their long term investments following the implementation of the TD rule. To test this conjecture, we employ the following regression for the firms that stop

issuing IMSs in the post-rule period.

$$\Delta INVESTMENT = r_0 + r_1 CSR + Controls \tag{3}$$

We consider four long term capital investment measures: capital expenditure (CAPEX), capital expenditure plus R&D expenditure (CAPRD), R&D expenditure plus SG&A (selling, general, and administrative) expense plus change in intangible assets (RSI), and net PPE growth (NETPPE). The dependent variable $\Delta INVESTMENT$ is the percentage change in each of the four measures one year after the TD rule (i.e., $\Delta CAPEX\_1$, $\Delta CAPRD\_1$, ΔRSI_1, and $\Delta NETPPE\_1$). Since it may take time for firms to adjust their investment policy following the cessation of quarterly reporting, we also measure the above variables over two years to improve the power of our test, (i.e., $\Delta CAPEX\_2$, $\Delta CAPRD\_2$, ΔRSI_2, and $\Delta NETPPE\_2$). We expect the coefficient on CSR to be positive, especially for the two-year change in capital investments.

Following Nallareddy, Pozen, and Rajgopal (2017), we control for the following variables that potentially affect corporate investment decisions; firm size (LNMV defined as the natural logarithm of market value of equity), growth (BTM representing book-to-market ratio), leverage (LEV as defined the above), firm performance (ROA as defined the above), cash holdings (CASH equal to cash, cash equivalents, and short-term investments divided by beginning total assets), stock price volatility (RETVOL measured as the standard deviation of daily stock returns over the 12-month period ending in the 4th month after fiscal year end), cross-listing (CROSSLIST as defined the above), and industry fixed effect. To avoid look-ahead bias, we use lagged values for the independent variables.

4.2.3 Consequences of abandoning quarterly financial reporting

A key concern of investors and regulators is that reducing financial reporting frequency may weaken transparency in financial reporting and increase information asymmetry. To address this concern in the context of this study, we investigate the impact of abandoning quarterly financial reporting on the quality of accounting information, analyst behavior, and

stock market reactions in the following periods. Specifically, we examine whether the decision to stop vs. continue the issuance of IMSs affects information quality in financial reporting (i.e., accrual quality and real earnings management), and the information environment for capital market participants such as financial analysts and shareholders. The regression models take the following generic form.

$$CONSEQUENCE = \lambda_0 + \lambda_1 CSR + \lambda_2 STOP\_IMS + \lambda_3 STOP\_IMS * CSR + Controls \quad (4)$$

The dependent variable CONSEQUENCE in Equation (4) represents the changes in information quality or information environment one year after the TD rule. In testing the impacts on information quality, we assess whether accounting information contains more noise. The first noise measure AEM_JONES is the discretionary accrual measure based on the absolute value of residuals from the Jones (1991) model modified by Kothari, Leone, and Wasley (2005). The second noise measure AEM_DD is the accrual quality measure in Dechow and Dechev (2002) modified by McNichols (2002) and Francis, LaFond, Olsson, and Schipper (2005), such that a higher AEM_DD reflects lower accounting quality. The third noise measure REM is the real earnings management measure based on Roychowdhury (2006), estimated by the absolute value of abnormal production minus abnormal expenses and minus abnormal operating cash flows. To estimate these noise measures, we require at least ten observations in each industry year. Thus, the dependent variable is the change in each of the three measures subsequent to the IMS reporting regime change (i.e., ΔAEM_JONES, ΔAEM_DD, and ΔREM). The main independent variables are the CSR index, the dummy variable STOP_IMS (equal to one for firms stopping IMSs, and zero otherwise), and the interaction of the two variables. We follow Jo and Kim (2007) and Zang (2012) to control for the determinants of earnings management behaviors. The control variables include firm size (LNMV), book-to-market ratio (BTM), leverage (LEV), return on assets (ROA), sales growth (SALEG), financial distress based on Altman's Z-score (ZSCORE), market share (MKTSHARE), marginal tax rate (MTAX), Big-4 auditor (BIG4), net operating assets (NOA), operating cycle (OPCYC), merger

and acquisition activities (MA), restructuring transactions (RESTRUCT), asset write-downs (WRITEOFF), institutional ownership (INSTOWN), and industry dummies. These control variables are defined in Appendix A, and lagged by one year.

To assess the impact of abandoning quarterly reporting on capital market participants, we first examines changes in analyst following (ΔLN_ANALYST), analyst forecast errors (ΔABS_FE), and forecast dispersion (ΔFDISP) one year after the TD rule became effective. LN_ANALYST is equal to natural logarithm of one plus the number of analysts following the firm. ABS_FE is computed as actual EPS minus median EPS estimates forecasted during the twelve-month period ending in the month of earnings announcement. FDISP is the standard deviation of forecast errors. We control for other factors that could affect the properties of analyst forecasts, including firm size, book-to-market, leverage, return on assets, return volatility, cross-listing, and industry fixed effect.

To explore the impact of abandoning quarterly reporting on investor perception, we examines changes in trading volume (ΔVOLUME), bid-ask spread (ΔSPREAD), and return volatility (ΔRETVOL), subsequent to the rule. VOLUME is the natural logarithm of average daily trading volume. SPREAD is the average daily quoted bid-ask spread, equal to ($0.5*$(PA$-$PB)/(PA+PB)), where PA represents ask price and PB represents bid price. [12] RETVOL is the return volatility measured as the standard deviation of daily stock returns. The control variables include firm size, book-to-market, leverage, return on assets, trading volume (except for the regression of ΔVOLUME), return volatility (except for the regression of ΔRETVOL), cross-listing, and industry dummies.

V. Discussions of the Empirical Results

5.1 Sample descriptions of IMS and TU

Table 2 shows how reporting behavior changes following the change to the TD rule.

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[12] As a sensitivity test, we also use the effective bid-ask spread measure (e.g., Chen, Miao, and Shevlin, 2015), equal to (Price$-$MidQuote)/MidQuote, where MidQuote = (PA+PB)/2), and find similar results.

Before considering the effect of CSR, we examine whether the reporting behavior changes following the TD rule, by comparing the frequency of IMS and TU issued in the pre- vs. post-rule period. Panel A in Table 2 shows that, among the 690 sample firms, 535 firms (77.5%) stop issuing IMSs, while 155 firms (22.5%) issue at least one IMS in the post-rule period, showing a salient tendency of stopping the issuance of IMS after the TD rule.

On aggregate, there is a significant increase in the number of firms issuing TUs, and the number of TUs issued. Panel B in Table 2 shows the increase in the reporting frequency of TU subsequent to the implementation of the TD rule. Overall, the number firms with no TU issuance experiences a significant decrease from 503 (72.9%) in the pre-rule period to 382 (55.3%) in the post-rule period. By contrast, 216 firms (31.3%) issue at least two TU after the rule, compared with only 97 firms (14.1%) before the rule. The Pearson's Chi-squared test suggests that the number of TU is significantly different between the two periods ($\chi^2 = 61.81$ and $\rho = 0.000$). We observe an increase in the frequency of issuing TU for the firms that discontinue the issuance of IMS in the post-rule period. Of the 535 firms ceasing issuing both the first-half and second-half IMS, 185 firms (34.6%) issue two or more TU after the rule, compared to only 73 firms (13.6%) prior to the rule. The number of firms with no TU issuance decreases significantly from 392 (73.2%) to 286 (53.5%). We find a directionally similar but lower-magnitude pattern for firms that continue with IMS issuance in the post-rule period; this may be due to the firms deciding to keep one of their IMS but replace another IMS with a TU. Overall, the sample description provides preliminary evidence that TUs serves as a substitutive information disclosure channel when firms terminated IMS issuance following the TD.

5.2 Descriptive statistics and correlation matrix

Table 3 presents the descriptive statistics on the variables used in the empirical analyses. In Panel A, the mean NUM_IMS is 0.361. This is consistent with the description of the sample in Table 2which shows that the majority of firms reduce the reporting frequency of IMS in the post-rule period. The issuance of TUs is on average more frequent, with a mean of 0.959. With

respect to CSR, the mean CSR1 (a binary variable) score is 0.435. CSR2, which ranges from 0–4, has a mean of 1.496. The median firm size is £418 million, untabulated (corresponding to LN_ASSETS of 12.944). The mean ASSETSIP, our proxy for the investment opportunity set, is 0.867, while the mean leverage, LEV, is 0.159, or 15.9%. The mean (median) Herfindahl index score, HERF, of 0.119 (0.051) indicates that firms are typically operating in highly competitive industries. In addition, the mean and median ROA are both 6%, with 15.2% of firms loss-making in the pre-rule period and 18.7% in the post-rule period. About 13% of firms are cross-listed. Overall, our sample consists of mainly large profitable LSE-listed firms. Furthermore, the share structure of the sample firms is not highly concentrated by insider ownership. The percentage of closely held shares (CLHELD) has the mean (median) of 17% (6.4%). The median LN_ANALYST of 1.386 corresponds to approximately 3 analysts per firm (with a mean of 7.9), however our sample does include larger firms, as there are 16 analysts per firm at the third quartile.

Table 3, Panel B reports descriptive statistics for the variables used in our second-step (consequences) analysis. Among firms that stop issuing IMS, we observe a positive mean and median increase in all of our measures of investment growth one and two years post-rule i.e., (ΔCAPEX_1, ΔCAPRD_1, ΔRSI_1, and ΔNETPPE_1, and ΔCAPEX_2, ΔCAPRD_2, ΔRSI_2, and ΔNETPPE_2). For our full sample of both firms that continue and stop issuing IMSs, we observe a very slight decrease in ΔAEM_JONES but a slight increase in ΔAEM_DD and ΔREM. ΔLN_ANALYST remains relatively constant, with a mean (median) change of −0.005 (0.000). However, while there is a slight increase in the mean ABS_FE (0.179), at the median it is slightly negative (−0.028). We observe a slight increase in dispersion, with mean (median) ΔFDISP of 0.531 (0.016). For market-based variables, there is an increase in the mean and median VOLUME (0.109 and 0.076, respectively), SPREAD (0.023 and 0.001), but also RETVOL (0.215 and 0.156).

Table 4 reports the correlation matrix, with Pearson (Spearman) correlations presented

below (above) the diagonal. NUM_IMS and NUM_TU have a negative correlation (with the Pearson and Spearman correlations of −0.177 and 0.15, respectively). This supports the potential substitution of IMS with TU, however, it is not statistically significant. While the correlation between NUM_IMS and CSR1 is highly significant (0.086 and 0.084), the correlation with CSR2 is not significant (0.139 and 0.123). However, while they are both positive, it is difficult to make inferences, as these univariate relationships do not control for any firm characteristics and other determinants of reporting choices. Among our variables, we do observe high correlations (>0.6) between CSR1 and CSR2 (which are not used in the same regression model), and other variables that one would reasonably expect to be related to firm size (for example, between LN_ASSETS or ASSETSIP and LN_ANALYST or CSR), or derived from the same data (e.g. ROA and LOSS_PRE).

5.3 Regression results

5.3.1 CSR Commitment and the issuance of IMS and TUs

We test the effect of CSR commitment on the reporting frequency of IMS and TUs in the post-rule period using multivariate regression analyses. Table 5 reports the results for the regressions of the number of IMS (Columns 1–3) and TUs (Column 4) issued in the post-rule period. We estimate the TU specification conditional on firms ceasing to issue an IMS. Columns 1–3 report the results from estimating Possion, negative binomial, and OLS regressions of the number of IMSs. The relationship between NUM_IMS and CSR1 is negative and significant at the 1% level in all three specifications, with coefficients of −0.532, −0.606, and −0.174, respectively, consistent with our hypothesis that firms with better CSR performance tend to issue fewer IMSs to mitigate potential investor short-termism. However, we observe no significant relationship between CSR1 and NUM_TU, suggesting that firms with strong CSR commitment do not appear to increase TU disclosure as a substitute after abandoning quarterly reporting.

In terms of the control variables, for the IMS specifications, the coefficient on SIZE is

significantly positive only in the OLS specification, however LN_ANALYST and CROSSLIST are highly significant in all specifications, and LEV and MF in two of the three specifications. Hence, firms with lower leverage and higher analyst following, cross-listed firms, and firms that issue management forecasts tend to issue more IMSs after the rule. This is similar to findings in Butler et al. (2007) that large firms tend to choose more frequent financial reporting. In addition, the negative coefficients on OPCYC in Columns 1 and 3 suggest that firms with longer operating cycle tend to decrease the reporting frequency of IMS in the post-rule period, possibly to avoid the increased estimation errors in accruals when operating cycle is longer (Dechow and Dichev, 2002). Last, firms with higher institutional ownership, INSTOWN, also have less frequent IMS. Such institutional ownership are also more likely to have long-term orientation (due to the proportion of pension funds and long-term investment funds), and thus may also not need or expect such frequent reporting. In the TU specification, as expected, the strongest control variable is the number of TUs in the previous year (Lagged NUM_TU), which controls for the general TU-issuing pattern in the past. The issuance of TUs is negatively related to firm size (particularly ASSETSIP).

Table 6 reports the results of regressing NUM_IMS and NUM_TU on the more refined CSR commitment variable CSR2. Our results are similar to those reported in Table 6; firms with strong CSR commitment fewer IMS reports. Similarly, we find no impact of CSR commitment on the use of TU (NUM_TU) in the post-rule period. The direction and levels of significance of our control variables are almost identical to those reported Table 5, with the exception of SIZE, which is significant and positive in all three specifications of NUM_IMS regression (Columns 1–3), and ASSETSIP, which is no longer significant for the NUM_TU specification as compared to Table 6 (Column 4).

Table 7 reports the results of estimating Equations (1) and (2) on a subset of firms that operate in environmentally sensitive industries, including oil and gas, mining, chemical, utilities, and pulp and paper industries. Our results from this subset of firms are of the same

direction with higher coefficient estimate value for CSR commitment variable than in the full sample. This reflects the fact that CSR commitment is a more reliable proxy for management long-term investment orientation in the environmentally sensitive industry, as expected. However, our results are less statistically significant than for the full sample due to the reduction in sample size. The findings here further enhance our confidence that CSR commitment is a good proxy for management long-term investment focus.

5.3.2 CSR Commitment and Capital Investments afterwards

Table 8 reports the results of estimating the impact of CSR commitment on capital investments for a subset of firms that abandoned quarterly reporting. In Columns 1–2, we find positive relationships between CSR1 and our percentage measures of change in capital expenditures over 1 and 2 years (ΔCAPEX_1 and ΔCAPEX_2, respectively). The coefficients for the 1-year measure are only marginally significant, but are stronger at 5% significance over two years. In Columns 3–4, we find a similarly positive relationship between CSR1 and the change in combined capex and R&D (ΔCAPRD_1 and ΔCAPRD_2), with CSR significant to 5% for both measures. Our results on ΔCAPRD are slightly stronger than on ΔCAPEX; this may be because changes may be effected more quickly through R&D than capital expenditures alone. In Columns 5–6, when we combine R&D with changes in SG&A and intangibles, we find only a marginally significant effect between CSR1 and ΔRSI over two years (ΔRSI_2), and no significant effect in the first year (ΔRSI_1). As recognition of intangibles is subject to accounting rules and treatment choices, it may be a more "noisy" measure of investment. Last, in Columns 7–8, we examine the relationship between CSR1 and changes in net PPE (ΔNETPPE_1 and ΔNETPPE_2). Similar to ΔRSI, we find no significant relationship between CSR1 and investment over one year (ΔNETPPE_1), and find only marginally significant results over two years (ΔNETPPE_2). Unlike ΔCAPEX and ΔCAPRD, which capture changes in annual flow measures (CAPEX and RD), ΔNETPPE reflects changes in gross PPE (from

both investment and disposal), and also a firm's choice of depreciation policy on continuing assets.

Overall, our results provide some evidence that, conditional on ceasing the issuance of IMSs, firms with strong CSR commitment tend to increase capital investments following the changes in financial reporting frequency. The results are stronger for long term capital investments (ΔCAPEX and ΔCAPRD) than those which arguably include other items (ΔRSI) or may be affected by accounting choices (ΔRSI and ΔNETPPE).

5.3.3 CSR Commitment and Quality of Accounting Information

Table 9 reports results of regressions estimating the relationship between CSR commitment and three proxies for the quality of accounting information after the cessation of quarterly reporting. In Column 1, when examining accrual earnings management (ΔAEM_JONES), as measured by the Jones model, we find a marginally significant negative relationship between CSR commitment and accrual earnings management (coefficient to CSR1 of -0.028, t=-1.65). This suggests that firms with long-term orientation are less concerned about managing earnings in the short run, and less likely to engage in accrual earnings management. The insignificant coefficient to STOP_IMS and STOP_IMS*CSR1 suggest that there is no incremental effect on the quality of accounting information after firms stopped quarterly reporting in our sample.

In Column 2, when using ΔAEM_DD as our second proxy for accounting information quality, we observe a marginal negative effect of stopping the issuance of IMS on accrual earnings management (coefficient of STOP_IMS being -0.006 with t=-1.91). Once again, the interaction term is insignificant. We find no evidence that stopping quarterly reporting has any significant impact on the quality of accounting information.

In Column 3, we report results from examining real earnings management (ΔREM). Our results on all three variables of interest, CSR1, STOP_IMS, and STOP_IMS*CSR1 suggest no

significant relationship with real earnings management. These results suggest that firms' CSR commitment and changing the frequency of financial reporting do not seem to diminish the quality of the accounting information in our empirical setting.

Overall, our results suggest that CSR commitment is negatively related to accrual earnings management. We find no evidence that abandoning quarterly reporting diminishes the quality of accounting information afterwards.

5.3.4 CSR Commitment and Analyst Behavior

Tables 10 reports the results of estimating the impact of CSR commitment and abandoning IMS reporting on analyst behavior, including analyst following, analyst forecast error, and forecast dispersion. These models aim to examine the impact of changing financial reporting frequency on the information asymmetry between the firm and financial analysts. In Columns 1 and 2, we find that CSR commitment and stopping the issuance of IMSs have no effect on analyst following (ΔLN_ANALYST), and forecast error (ΔABS_FE), respectively. In Column 3, we observe a marginally significant negative relationship between analyst forecast dispersion (ΔFDISP) and CSR commitment conditional on stopping IMS issuance (coefficient of STOP_IMS*CSR1 being -1.912 with t=-1.79). When interpreted jointly with the underlying CSR1 variable (coefficient of 1.665, t=1.40), this effect is not significant.

Taking together, we find no evidence that stopping IMS issuance has any direct impact on analyst willingness to follow the firms or analysts' ability to forecast the earnings of abandoning firms. The results in Table 10 are consistent with those of Nalareddy et al. (2017), who also find no effect of stopping IMS (quarterly reporting) on analyst forecast properties. Our results differ from Nalareddy et al. (2017) who find that firms that stopped issuing IMSs subsequently have fewer analysts following.

5.3.5 CSR Commitment and Investor Behavior

Finally, we report our analysis of the impact of abandoning quarterly reporting on

average investors in a capital market setting. Table 11 reports results of regressions estimating whether abandoning quarterly IMSs leads to changes in trading volume (ΔVOLUME), bid-ask spread (ΔSPREAD), and return volatility (ΔRETVOL). We find that CSR commitment and stopping the issuance of IMSs have no significant effect on ΔVOLUME, ΔSPREAD, or ΔRETVOL. Our results suggest that investors in firms with strong CSR commitment and ceasing quarterly reporting do not suffer from increased information asymmetry. While Shleicher and Walker (2015) propose that the withdrawal of IMS may lead to a *slight* loss of information, based on the results from the implementation of IMSs, our results suggest that this is not the case. Our results suggest that IMSs contains relatively little information that cannot be replaced by other channels, such as mandatory disclosures of material information, trading updates, or voluntary earnings guidance.

VI. Conclusion

This study examines whether corporate commitment to CSR and sustainability affects firms' decision in choosing financial reporting frequency. We posit that corporate commitment to CSR symbolizes a firm's orientation towards long-term investments and management disapproval of short termism. As such, firms with strong commitment to CSR would be less likely to give in to market price pressure and to cater to short-term oriented investors. We hypothesize and find evidence that firms with superior CSR performance chose to abandon quarterly financial reporting at fixed intervals following the reporting regime change in Europe in 2014. In addition, we find evidence that firms with strong CSR commitment increased capital investments after they abandoned quarterly financial reporting. We do not find evidence that cessation of quarterly reporting diminishes accounting information quality or analyst's interest and ability to forecast earnings. We find no direct evidence that investors perceived that abandoning quarterly reporting will increase information asymmetry. Overall, our findings are consistent with management orientation toward sustainability affects firms' choice of financial reporting frequency. It appears that firms with strong CSR commitment enjoyed the

freedom to pursue long term capital investments after abandoning quarterly financial reporting.

The findings in this study also support the rationale behind the EU's amendment to the disclosure requirement that publishing interim management statements or quarterly financial reports at fixed intervals represent an administrative burden and may not be cost effective for many small and medium-sized issuers. Indeed, our results shows that about 78% of the sample firms abandoned issuing IMSs altogether following the reporting regime change in the UK. In particular, we find the smaller firms are more likely to abandon quarterly interim management statements even though conventional wisdom suggests that smaller firms should benefit most from more frequent reporting because of higher information asymmetry. This finding is also consistent with small firms having more short-term oriented investors such that the market pressure from short-term oriented investors offsets the benefits from increased disclosure frequency.

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Interim management statements and trading updates

NUM_IMS = Number of interim management statements in the post-rule period.

STOP_IMS = 1 for firms without interim management statements in the post-rule period, and 0 otherwise.

NUM_TU = Number of trading updates in the post-rule period.

CSR variables:

CSR1 = 1 if a firm issues a standalone CSR report, and 0 otherwise.

CSR2 = 4 if a firm issues a standalone CSR report that is complied with GRI guidelines and assured by an external auditor, 3 if a firm issues a standalone CSR report that is either complied with GRI guidelines only or assured by an external auditor only, 2 if a firm issues a standalone CSR report that is neither complied with GRI guidelines nor assured by an external auditor, 1 if a firm reports CSR information in a section of its annual report or on its website, and 0 if no CSR information is disclosed.

Investments:

ΔCAPEX_1 = Percentage change in capital expenditure (WC04601) one year after the rule.

ΔCAPEX_2 = Percentage change in capital expenditure (WC04601) two years after the rule.

ΔCAPRD_1 = Percentage change in capital expenditure (WC04601) plus research and development expenses (WC01201) one year after the rule.

ΔCAPRD_2 = Percentage change in capital expenditure (WC04601) plus research and development expenses (WC01201) two years after the rule.

ΔRSI_1 = Percentage change in the sum of R&D expenditure (WC04601), SG&A (WC01101), and change in intangible assets (WC02649) one year after the rule.

ΔRSI_2 = Percentage change in the sum of R&D expenditure (WC04601), SG&A (WC01101), and change in intangible assets (WC02649) two years after the rule.

ΔNETPPE_1 = Percentage change in net PPEs growth (WC02501) one year after the rule.

ΔNETPPE_2 = Percentage change in net PPEs growth (WC02501) two years after the rule.

Earnings management:

ΔAEM_JONES = Change in discretionary accruals subsequent to the rule. The measure is based on absolute value of residuals from the Jones (1991) model modified by Kothari, Leone, and Wasley (2005).

ΔAEM_DD = Change in discretionary accruals subsequent to the rule. The measure is based on Dechow and Dechev (2002) modified by McNichols (2002) and Francis, LaFond, Olsson, and Schipper (2005).

ΔREM = Change in real earnings management subsequent to the rule. The measure is based on absolute value of abnormal production minus abnormal expenses minus abnormal operating cash flows, following Roychowdhury (2006).

Analyst forecasts:

ΔLN_ANALYST = Change in natural logarithm of one plus the number of financial analysts following the firm (obtained from I/B/E/S International) subsequent to the rule.

ΔABS_FE = Change in absolute value of forecast error subsequent to the rule. The forecast error is defined as actual EPS minus median analyst estimate made during the twelve-month period ending on the month of earnings announcement (obtained from I/B/E/S International).

ΔFDISP = Change in forecast dispersion subsequent to the rule. The forecast dispersion is defined as standard deviation of forecast error (obtained from I/B/E/S International).

Capital market consequences:

ΔVOLUME = Change in natural logarithm of average daily trading volume (VO) subsequent to the rule.

ΔSPREAD = Change in average daily quoted bid-ask spread (0.5*(PA−PB)/(PA+PB)) subsequent to the rule.

ΔRETVOL = Change in standard deviation of daily stock returns (ΔP) subsequent to the rule.

Control variables for the analyses on the determinants of IMS:

LN_ASSETS = Natural logarithm of total assets (WC02999).

ASSETSIP = Total assets (WC02999) divided by the sum of total liabilities (WC03351) and market value of equity (number of shares (WC05301) multiplied by share price (WC05001)).

LEV	=	Sum of short-term debt (WC03251) and long-term debt (WC03051), divided by total assets (WC02999).
HERF	=	Industry Herfindahl Index, equal to the sum of squared market shares, based on sales (wc01001), for each 1-digit ICB industry in each year.
OPCYC	=	Receivables (WC02051) divided by sales (WC01001) plus inventory (WC02101) divided by cost of goods sold (WC01051), both divided by 360.
ROA	=	Return on assets (WC08326).
LOSS_PRE	=	1 if the firm reports net losses in the pre-rule period, and 0 otherwise.
LOSS_POST	=	1 if the firm reports net losses in the post-rule period, and 0 otherwise.
CROSSLIST	=	1 if the firm is cross-listed in the U.S. (WC11496), and 0 otherwise.
CLHELD	=	Percentage of closely held shares (WC08021).
LN_ANALYST	=	Natural logarithm of one plus the number of financial analysts following the firm (obtained from I/B/E/S International), with missing values set to be zero.
INSTOWN	=	Institutional ownership (obtained from Capital IQ).
MF	=	1 if the firm issues management forecast (obtained from Capital IQ), and 0 otherwise.

Additional control variables for the analyses on the consequences of stopping IMS:

LNMV	=	Natural logarithm of market value of equity (number of shares (WC05301) multiplied by share price (WC05001)).
BTM	=	Book value of equity (WC03501) divided by market value of equity (number of shares (WC05301) multiplied by share price (WC05001)).
CASH	=	Cash, cash equivalents, and short-term investments (WC02001) divided by beginning total assets (WC02999).
RETVOL	=	Standard deviation of daily stock returns (ΔP) over the 12-month period ending in the 4th month after fiscal year end, from the pre- to post-rule period.
SALEG	=	Percentage change in sales (WC01001) during the year.
ZSCORE	=	Decile ranks of Altman's Z-score based on the emerging market model, equal to Z = 3.25 + 6.56*X1 + 3.26*X2 + 6.72*X3 + 1.05*X4, where X1 = [Current assets (WC02201) − Current liabilities (WC03101)] / Total assets (WC02999), X2 = Retained earnings (WC03495) / Total assets (WC02999), X3 = Earnings before interest and taxes (WC18191) / Total

assets (WC02999), and X4 = Common equity (WC03501) / Total liabilities (WC03351).

MKTSHARE	=	Ratio of a firm's sales (WC01001) to the total sales of its industry.
MTAX	=	Marginal tax rate (WC08346).
BIG4	=	1 for Big-4 auditor (WC07800), and 0 otherwise.
NOA	=	Net operating assets, measured by common equity (WC03501) less cash and marketable securities (WC02001) plus total debt (WC03255), divided by sales (WC01001).
OPCYC	=	Receivables (WC02051) divided by sales (WC01001) plus inventory (WC02101) divided by cost of goods sold (WC01051), both divided by 360.
MA	=	1 if the firm engages in a merger or acquisition (WC04355), and 0 otherwise.
RESTRUCT	=	1 if the firm engages in restructuring activities (WC18227), and 0 otherwise.
WRITEOFF	=	1 if the firm has asset write-downs (WC18225 and WC18226), and 0 otherwise.

Figure 1: Classification of IMS into H1, H2, and Transitional Period

Table 1: Sample selection and IMS-issuing activity

Panel A: Sample selection

	Number of firms
Firms with IMS and TU filings on the NSM database	776
Less:	
Firms with missing financial data	(44)
Firms that do not exist either in the pre- or post-rule period	(42)
Final Sample	690

Panel B: Distribution of sample by CSR score

CSR reporting characteristics	N	CSR1 Score	CSR1 N	CSR2 Score	CSR2 N
Firms publishing standalone CSR reports with:					
Both GRI compliance and external assurance	60			4	60
GRI compliance only	54			3	102
External assurance only	48				
Neither GRI compliance nor external assurance	138			2	138
Total: Firms publishing standalone CSR reports	300	1	300		
Firms providing CSR information as a section of annual report or on a website	210			1	210
Firms with no CSR reporting	180	0	390	0	180
Final sample	690		690		690

Table 2: Sample description: Number of IMS and TU issued in the pre- vs. post-rule period (N = 690)

Panel A: distribution of IMS in post-rule period

	Either Q1 or Q3	
Number of firms with IMS	155	
Number of firms without IMS	535	
Total	690	

Panel B: distributions of TU in post-rule period

Number of TUs issued annually	Firms that *stop* issuing IMSs in the post-rule period (535 firms)			Firms that *continue* issuing IMSs in the post-rule period (155 firms)			All firms (535 + 155 = 690)		
	Pre-rule	Post-rule	Δ	Pre-rule	Post-rule	Δ	Pre-rule	Post-rule	Δ
≥ 2	73	185	+112	24	31	+7	97	216	+119
1	70	64	−6	20	28	+8	90	92	+2
0	392	286	−106	111	96	−15	503	382	−121
Total	535	535		155	155		690	690	
χ^2 of difference between pre- and post-rule period	$\chi^2 = 65.46$; $\rho = 0.000$			$\chi^2 = 3.31$; $\rho = 0.191$			$\chi^2 = 61.81$; $\rho = 0.000$		

Table 3: Descriptive statistics

Panel A: Variables for the determinants of IMS and TU issuance

Variable	N	Mean	Std. Dev.	25%	Median	75%
NUM_IMS	690	0.361	0.710	0	0	0
NUM_TU	690	0.959	1.270	0	0	2
CSR1	690	0.435	0.496	0	0	1
CSR2	690	1.496	1.262	0	1	2
LN_ASSETS	690	13.138	2.019	11.766	12.944	14.288
ASSETSIP	690	0.867	0.346	0.601	0.952	1.093
LEV	690	0.159	0.172	0.002	0.108	0.255
HERF	690	0.119	0.154	0.030	0.051	0.150
OPCYC (*100)	690	0.109	0.266	0.011	0.056	0.113
ROA	690	0.060	0.097	0.013	0.060	0.108
LOSS_PRE	690	0.152	0.359	0	0	0
LOSS_POST	690	0.187	0.390	0	0	0
CROSSLIST	690	0.130	0.337	0	0	0
CLHELD	690	0.170	0.212	0.015	0.064	0.267
LN_ANALYST	690	1.428	1.318	0	1.386	2.773
INSTOWN	690	0.575	0.381	0.172	0.727	0.891
MF	690	0.194	0.396	0	0	0

Panel B: Variables for consequences of stopping IMS

Variable	N	Mean	Std. Dev.	25%	Median	75%
Investments (Firms with STOP_IMS=1):						
ΔCAPEX_1	288	0.127	0.602	-0.254	0.001	0.318
ΔCAPEX_2	267	0.157	0.735	-0.370	0.044	0.459
ΔCAPRD_1	288	0.098	0.561	-0.237	0.000	0.254
ΔCAPRD_2	267	0.137	0.658	-0.297	0.066	0.396
ΔRSI_1	476	0.112	1.603	-0.171	0.016	0.157
ΔRSI_2	447	0.168	0.883	-0.161	0.100	0.331
ΔNETPPE_1	294	-0.031	0.287	-0.119	-0.009	0.087
ΔNETPPE_2	273	-0.004	0.324	-0.123	0.009	0.164
Earnings management (All firms):						
ΔAEM_JONES	634	-0.002	0.076	-0.028	-0.004	0.025
ΔAEM_DD	605	0.003	0.020	-0.006	0.002	0.013
ΔREM	626	0.005	0.124	-0.037	0.004	0.044
Analyst forecasts (All firms):						
ΔLN_ANALYST	355	-0.005	0.221	-0.123	0.000	0.113
ΔABS_FE	355	0.179	4.300	-0.741	-0.028	0.983
ΔFDISP	355	0.531	4.631	-0.412	0.016	0.815
Market consequences (All firms):						
ΔVOLUME	641	0.109	0.439	-0.131	0.076	0.311
ΔSPREAD	641	0.023	0.172	-0.009	0.001	0.042
ΔRETVOL	641	0.215	0.535	-0.052	0.156	0.401

Table 4: Correlation matrix

	NUM_IMS	NUM_TU	CSR1	CSR2	LN_ASSETS	ASSETIP	LEV	HERF	OPCYC	ROA	LOSS_PRE	LOSS_POST	CROSSLIST	CHELD	LN_ANALYST	INSTOWN	MF
NUM_IMS	–	-0.133	0.084**	0.123	0.238	-0.094**	0.012#	0.203	0.006#	-0.037#	-0.029#	-0.070*	0.258	0.005#	0.282	-0.064*	0.160
NUM_TU	-0.177	–	0.245	0.302	0.263	-0.518	0.258	0.406	0.393	0.062#	-0.046#	-0.107	0.115	0.017#	0.528	0.160	0.314
CSR1	0.086**	0.238	–	0.885	0.556	-0.299	0.282	0.222	0.140	0.058#	-0.070*	-0.016#	0.355	-0.299	0.518	0.308	0.345
CSR2	0.139	0.243	0.866	–	0.643	-0.372	0.368	0.346	0.181	0.041#	-0.062#	0.018#	0.412	-0.313	0.608	0.325	0.368
LN_ASSETS	0.305	0.170	0.537	0.648	–	-0.321	0.452	0.415	0.129	0.035#	-0.173	-0.106	0.459	-0.364	0.716	0.266	0.376
ASSETIP	-0.081**	-0.456	-0.267	-0.292	-0.228	–	-0.244	-0.404	-0.363	-0.295	0.226	0.278	-0.248	0.123	-0.634	-0.210	-0.357
LEV	0.016#	0.172	0.207	0.267	0.312	-0.176	–	0.346	0.251	-0.072*	0.030#	-0.051#	0.241	-0.126	0.410	0.112	0.279
HERF	0.102	0.153	0.151	0.239	0.281	-0.071*	0.160	–	0.442	-0.123	0.028#	-0.030#	0.317	0.072*	0.670	-0.002	0.341
OPCYC	-0.017#	0.083**	0.038#	0.041#	0.058#	-0.060#	0.144	0.049#	–	0.027#	-0.013#	-0.042#	0.089**	0.102	0.397	0.046#	0.238
ROA	-0.011#	0.063*	0.076**	0.047#	0.029#	-0.301	-0.088**	-0.189	-0.024#	–	-0.622	-0.233	-0.017#	-0.031#	0.039#	0.120#	0.061#
LOSS_PRE	-0.051#	-0.050#	-0.070*	-0.058#	-0.153	0.247	0.054#	0.126	0.012#	-0.640	–	0.294	-0.008#	0.044#	-0.088**	-0.074*	-0.035#
LOSS_POST	-0.066*	-0.114	-0.016#	0.027#	-0.074*	0.269	-0.053#	0.127	0.014#	-0.246	0.294	–	-0.031#	0.002#	-0.115	-0.016#	-0.019#
CROSSLIST	0.252	0.104	0.355	0.445	0.519	-0.202	0.205	0.255	0.012#	-0.005#	-0.008#	-0.031#	–	-0.225	0.500	0.043#	0.386
CHELD	0.003#	-0.036#	-0.246	-0.260	-0.294	0.184	-0.018#	0.108	0.104	-0.095**	0.092**	-0.007#	-0.164	–	-0.174	-0.335	-0.113
LN_ANALYST	0.251	0.504	0.517	0.582	0.691	-0.584	0.347	0.396	0.114	0.036#	-0.096**	-0.127	0.477	-0.164	–	0.195	0.513
INSTOWN	-0.062#	0.161	0.312	0.320	0.252	-0.216	0.043#	0.006#	-0.048#	0.117	-0.067*	-0.004#	0.074*	-0.363	0.219	–	0.137**
MF	0.158	0.299	0.345	0.365	0.360	-0.340	0.238	0.250	0.052#	0.041#	-0.035#	-0.019#	0.386	-0.113	0.509	0.157	–

Pearson (Spearman) correlations are reported below (above) the diagonal.

Correlation coefficients are significant at the 1% level, except that ** and * represent the 5% and 10% significance level, respectively, and # represents insignificance at the 10% level.

Table 5: CSR Commitment and IMS and TU issuance in the post-rule period

Variable	NUM_IMS			NUM_TU (STOP_IMS=1)
	Poisson	Negative Binomial	OLS	Poisson
	(1)	(2)	(3)	(4)
CSR1	**-0.532***	**-0.606***	**-0.174***	**-0.140**
	(-2.96)	**(-3.17)**	**(-3.16)**	**(-1.35)**
Lagged NUM_TU				0.312***
				(7.03)
SIZE	0.085	0.092	0.070***	-0.051
	(1.42)	(1.47)	(2.96)	(-1.04)
ASSETSIP	-0.148	-0.160	-0.062	-0.438*
	(-0.44)	(-0.47)	(-0.62)	(-1.67)
LEV	-0.742	-0.902*	-0.372**	0.336
	(-1.57)	(-1.92)	(-2.38)	(1.24)
HERF	-0.388	-0.386	0.150	0.879
	(-0.33)	(-0.32)	(0.35)	(1.41)
OPCYC	-0.571*	-0.495	-0.168**	0.320*
	(-1.76)	(-1.24)	(-1.98)	(1.84)
ROA	-1.140	-1.182	-0.496	-0.465
	(-1.03)	(-1.13)	(-1.48)	(-0.71)
LOSS_PRE	-0.151	-0.193	-0.054	-0.188
	(-0.49)	(-0.63)	(-0.61)	(-1.08)
LOSS_POST	-0.182	-0.189	-0.048	-0.099
	(-0.75)	(-0.73)	(-0.73)	(-0.65)
CROSSLIST	0.440**	0.449**	0.251**	-0.127
	(2.31)	(2.24)	(2.38)	(-0.91)
CLHELD	0.561	0.653	0.260*	0.199
	(1.41)	(1.59)	(1.78)	(0.76)
LN_ANALYST	0.468***	0.512***	0.147***	0.466***
	(3.88)	(4.00)	(3.56)	(4.85)
INSTOWN	-0.499**	-0.621***	-0.203***	0.128
	(-2.34)	(-2.81)	(-2.68)	(0.91)
MF	0.424**	0.467**	0.135	-0.008
	(2.22)	(2.25)	(1.61)	(-0.09)
Intercept	-3.034***	-3.239***	-0.913**	-0.373
	(-2.69)	(-2.86)	(-2.35)	(-0.45)
Industry	Yes	Yes	Yes	Yes
N	690	690	690	535
Pseudo/Adj. R^2	13.13%	9.47%	15.71%	34.90%

Variable definitions are provided in Appendix B. Standard errors are adjusted for clustering by firm. Z-values are reported in the parentheses below the coefficients. ***, ** and * represent the 1%, 5% and 10% significance level, respectively at two-tailed levels of significance.

Table 6: CSR Commitment and IMS and TU issuance in the post-rule period

Variable	NUM_IMS			NUM_TU (STOP_IMS=1)
	Poisson	Negative Binomial	OLS	Poisson
	(1)	(2)	(3)	(4)
CSR2	**-0.206***	**-0.230***	**-0.060***	**-0.013**
	(-2.61)	**(-2.85)**	**(-2.59)**	**(-0.26)**
Lagged NUM_TU				0.311***
				(7.17)
SIZE	0.102*	0.112*	0.074***	-0.061
	(1.67)	(1.74)	(3.13)	(-1.20)
ASSETSIP	-0.179	-0.207	-0.073	-0.428
	(-0.53)	(-0.59)	(-0.72)	(-1.62)
LEV	-0.670	-0.824*	-0.361**	0.333
	(-1.40)	(-1.73)	(-2.31)	(1.24)
HERF	-0.257	-0.172	0.229	0.927
	(-0.23)	(-0.14)	(0.52)	(1.48)
OPCYC	-0.597*	-0.496	-0.168*	0.329*
	(-1.81)	(-1.21)	(-1.95)	(1.92)
ROA	-1.178	-1.189	-0.500	-0.453
	(-1.10)	(-1.16)	(-1.49)	(-0.70)
LOSS_PRE	-0.159	-0.178	-0.053	-0.186
	(-0.51)	(-0.57)	(-0.60)	(-1.08)
LOSS_POST	-0.138	-0.140	-0.039	-0.096
	(-0.55)	(-0.54)	(-0.59)	(-0.62)
CROSSLIST	0.476**	0.483**	0.261**	-0.116
	(2.47)	(2.36)	(2.45)	(-0.87)
CLHELD	0.523	0.624	0.261*	0.184
	(1.32)	(1.50)	(1.77)	(0.72)
LN_ANALYST	0.450***	0.484***	0.136***	0.446***
	(3.59)	(3.65)	(3.28)	(4.73)
INSTOWN	-0.525**	-0.635***	-0.211***	0.102
	(-2.48)	(-2.87)	(-2.79)	(0.73)
MF	0.400**	0.439**	0.123	-0.027
	(2.13)	(2.16)	(1.47)	(-0.31)
Intercept	-3.176***	-3.452***	-0.976**	-0.278
	(-2.82)	(-3.01)	(-2.47)	(-0.34)
Industry	Yes	Yes	Yes	Yes
N	690	690	690	535
Pseudo/Adj. R^2	12.93%	9.26%	15.35%	34.80%

Variable definitions are provided in Appendix B. Standard errors are adjusted for clustering by firm. Z-values are reported in the parentheses below the coefficients. ***, ** and * represent the 1%, 5% and 10% significance level, respectively at two-tailed levels of significance.

Table 7:   Results from environmentally sensitive industries

Panel A: CSR Commitment and IMS and TU issuance in the post-rule period

Variable	NUM_IMS			NUM_TU
	Poisson	Negative Binomial	OLS	Poisson
	(1)	(2)	(3)	(4)
CSR1	-0.809*	-0.834*	-0.209*	-0.092
	(-1.85)	(-1.92)	(-1.78)	(-0.75)
Lagged NUM_TU				0.362***
				(7.43)
Controls	Yes	Yes	Yes	Yes
N	181	181	181	143
Pseudo/Adj. R^2	14.39%	11.88%	9.10%	18.37%

Panel B: CSR Commitment and IMS and TU issuance in the post-rule period

Variable	NUM_IMS			NUM_TU
	Poisson	Negative Binomial	OLS	Poisson
	(1)	(2)	(3)	(4)
CSR2	-0.317*	-0.309*	-0.097*	-0.002
	(-1.67)	(-1.71)	(-1.77)	(-0.05)
Lagged NUM_TU				0.361***
				(7.38)
Controls	Yes	Yes	Yes	Yes
N	181	181	181	143
Pseudo/Adj. R^2	14.10%	11.49%	8.88%	18.32%

Environmentally-sensitive industries include 1-digit ICB of 0 (Oil and Gas), 1 (Basic Materials), 2 (Industrials), and 7 (Utilities). Variable definitions are provided in Appendix B. Standard errors are adjusted for clustering by firm. Z-values are reported in the parentheses below the coefficients. ***, ** and * represent the 1%, 5% and 10% significance level, respectively, at two-tailed levels of significance.

Table 8: CSR Commitment and Changes in Capital Investments

Variable	I		II		III		IV	
	ΔCAPEX_1	ΔCAPEX_2	ΔCAPRD_1	ΔCAPRD_2	ΔRSI_1	ΔRSI_2	ΔNETPPE_1	ΔNETPPE_2
CSR1	**0.174***	**0.233****	**0.201****	**0.235****	**-0.140**	**0.146***	**0.028**	**0.085***
	(1.68)	**(2.03)**	**(2.09)**	**(2.24)**	**(-0.89)**	**(1.65)**	**(0.68)**	**(1.75)**
LNMV	-0.025	-0.044	-0.041	-0.058	0.062	-0.085***	0.007	-0.015
	(-0.73)	(-1.10)	(-1.28)	(-1.63)	(0.93)	(-2.67)	(0.48)	(-0.90)
BTM	-0.045	-0.109	-0.023	-0.076	-0.114	-0.164	0.020	-0.057
	(-0.56)	(-0.76)	(-0.32)	(-0.59)	(-0.61)	(-1.14)	(0.52)	(-1.04)
LEV	0.301	0.424	0.217	0.321	0.295	0.262	-0.041	0.005
	(1.02)	(1.14)	(0.77)	(0.96)	(0.59)	(0.86)	(-0.33)	(0.03)
ROA	0.472	0.444	0.789	1.137**	-0.115	0.670	-0.215	-0.512
	(0.88)	(0.60)	(1.61)	(2.00)	(-0.12)	(1.24)	(-0.80)	(-1.52)
CASH	0.686**	0.633	0.582*	0.567*	1.775*	0.354	0.206	0.023
	(1.98)	(1.58)	(1.91)	(1.78)	(1.76)	(0.77)	(1.29)	(0.13)
RETVOL	-0.599	9.864	-1.025	13.658	-23.665**	-0.800	-1.811	0.352
	(-0.08)	(0.98)	(-0.18)	(1.60)	(-2.12)	(-0.09)	(-0.47)	(0.07)
CROSSLIST	-0.132	-0.192	-0.160*	-0.133	-0.017	0.629**	-0.067	-0.014
	(-1.35)	(-1.64)	(-1.94)	(-1.29)	(-0.03)	(2.31)	(-1.22)	(-0.20)
Intercept	0.051	-0.207	0.241	-0.161	0.048	1.853***	-0.156	0.253
	(0.11)	(-0.30)	(0.54)	(-0.26)	(0.07)	(2.92)	(-0.67)	(0.88)
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	288	267	288	267	476	447	294	273
R^2	7.26%	10.53%	9.48%	12.78%	4.63%	8.88%	5.66%	7.03%

Variable definitions are provided in Appendix A. Standard errors are adjusted for clustering by firm. T-values are reported in the parentheses below the coefficients. ***, ** and * represent the 1%, 5% and 10% significance level, respectively, at two-tailed levels of significance.

Table 9: CSR Commitment and Quality of Accounting information

Variable	ΔAEM_JONES	ΔAEM_DD	ΔREM
CSR1	-0.028*	-0.002	0.012
	(-1.65)	(-0.49)	(0.49)
STOP_IMS	-0.016	-0.006*	0.002
	(-1.23)	(-1.91)	(0.16)
STOP_IMS*CSR1	**0.025**	**0.002**	**-0.014**
	(1.47)	**(0.58)**	**(-0.55)**
LNMV	0.001	0.002**	-0.007
	(0.39)	(2.25)	(-1.43)
BTM	0.008	0.007**	-0.014
	(0.85)	(2.55)	(-0.72)
LEV	-0.020	0.006	-0.017
	(-0.73)	(0.97)	(-0.40)
ROA	-0.030	-0.005	-0.006
	(-0.56)	(-0.40)	(-0.07)
SALEG	0.002	-0.001	-0.003
	(0.69)	(-1.12)	(-0.76)
ZSCORE	0.002	-0.000	0.003
	(0.84)	(-0.21)	(0.76)
MKTSHARE	0.056	-0.017	0.047
	(1.35)	(-1.27)	(0.44)
MTAX	0.004	-0.003	-0.003
	(0.22)	(-0.59)	(-0.09)
BIG4	0.006	-0.001	0.015
	(0.50)	(-0.39)	(0.93)
NOA	0.289	-0.106*	-0.066
	(1.41)	(-1.74)	(-0.51)
OPCYC	0.009	-0.004	0.002
	(0.77)	(-1.57)	(0.19)
MA	-0.001	-0.004*	-0.021
	(-0.19)	(-1.96)	(-1.38)
RESTRUCT	-0.006	0.001	0.015
	(-0.72)	(0.50)	(0.95)
WRITEOFF	0.007	0.001	-0.003
	(1.03)	(0.53)	(-0.16)
INSTOWN	-0.019*	-0.000	0.008
	(-1.87)	(-0.08)	(0.58)
Intercept	-0.021	-0.021	0.068
	(-0.44)	(-1.61)	(0.80)
Industry	Yes	Yes	Yes
N	634	605	626
R^2	5.63%	10.48%	3.90%

Variable definitions are provided in Appendix A. Standard errors are adjusted for clustering by firm. T-values are reported in the parentheses below the coefficients. ***, ** and * represent the 1%, 5% and 10% significance level, respectively, at two-tailed levels of significance.

Table 10: CSR Commitment and Analyst Behavior

Variable	ΔLN_ANALYST	ΔABS_FE	ΔFDISP
CSR1	-0.004	1.206	1.665
	(-0.08)	(1.31)	(1.40)
STOP_IMS	0.055	0.975	0.388
	(0.95)	(1.27)	(0.72)
STOP_IMS*CSR1	**-0.055**	**-0.806**	**-1.912***
	(-0.88)	**(-0.79)**	**(-1.79)**
LNMV	-0.009	-0.240	-0.131
	(-0.68)	(-1.09)	(-0.54)
BTM	-0.027	0.137	0.109
	(-0.71)	(0.25)	(0.22)
LEV	-0.052	-0.357	2.702
	(-0.76)	(-0.33)	(1.58)
ROA	-0.270*	2.108	3.265
	(-1.65)	(0.51)	(0.62)
RETVOL	-0.072**	-0.760	-0.682
	(-2.35)	(-1.35)	(-1.48)
CROSSLIST	-0.003	0.220	-0.231
	(-0.08)	(0.35)	(-0.40)
Intercept	0.298	3.394	2.092
	(1.37)	(0.88)	(0.55)
Industry	Yes	Yes	Yes
N	355	355	355
R^2	5.17%	2.81%	6.36%

Variable definitions are provided in Appendix A. Standard errors are adjusted for clustering by firm. T-values are reported in the parentheses below the coefficients. ***, ** and * represent the 1%, 5% and 10% significance level, respectively, at two-tailed levels of significance.

Table 11: CSR Commitment and Investor Behavior

Variable	ΔVOLUME	ΔSPREAD	ΔRETVOL
CSR1	0.044	-0.020	0.123
	(0.60)	(-0.62)	(1.22)
STOP_IMS	0.014	-0.028	0.059
	(0.22)	(-0.79)	(0.75)
STOP_IMS*CSR1	**0.022**	**0.029**	**-0.090**
	(0.29)	**(0.80)**	**(-0.86)**
LNMV	-0.027**	0.001	0.009
	(-2.09)	(0.10)	(0.43)
BTM	-0.018	0.046*	0.099
	(-0.34)	(1.79)	(1.21)
LEV	-0.068	-0.017	0.200
	(-0.52)	(-0.30)	(1.14)
ROA	-0.446**	-0.057	0.396
	(-2.05)	(-0.54)	(1.43)
VOLUME		-0.007	0.024
		(-0.82)	(1.28)
RETVOL	-9.366**	2.209	
	(-2.29)	(0.95)	
CROSSLIST	-0.028	0.028	-0.130
	(-0.52)	(1.43)	(-1.59)
Intercept	0.771***	0.001	0.257
	(2.98)	(0.01)	(0.85)
Industry	Yes	Yes	Yes
N	641	641	641
R^2	4.81%	4.93%	9.00%

Variable definitions are provided in Appendix A. Standard errors are adjusted for clustering by firm. T-values are reported in the parentheses below the coefficients. ***, ** and * represent the 1%, 5% and 10% significance level, respectively, at two-tailed levels of significance.