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Hombach, Katharina | Sellhorn, Thorsten

## Firm Value Effects of Targeted Disclosure Regulation: The Role of Reputational Costs

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Katharina Hombach[*]
Frankfurt School of Finance & Management

Thorsten Sellhorn[†]
LMU Munich School of Management

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**Abstract:** We study the reputational costs of 'targeted disclosure regulation' – disclosure requirements that pursue policy objectives outside of securities regulators' traditional missions. This emerging type of disclosure regulation empowers civil society to influence firms' actions through public pressure. We study the SEC's extraction payments disclosure rule, which requires oil and gas firms to publish details about their payments to host governments. Consistent with reputational costs for affected firms, our event-study results document that the rule's negative effect on firm value is stronger where greater reputational risk makes firms more vulnerable to public pressure. Our qualitative field evidence suggests that reputational costs arise because the required disclosures facilitate pressure groups' campaigning. These findings are robust to several alternative explanations and research design choices.

**Key terms**: Disclosure regulation, reputational costs, pressure groups, oil and gas, public scrutiny

[*]   k.hombach@fs.de; Frankfurt School of Finance & Management, Adickesallee 32, 60322 Frankfurt (Main), Germany.
[†]   sellhorn@bwl.lmu.de; LMU Munich School of Management, Ludwigstr. 28, 80539, Munich, Germany.

# Firm Value Effects of Targeted Disclosure Regulation: The Role of Reputational Costs

We study the reputational costs of 'targeted disclosure regulation' – disclosure requirements that pursue policy objectives outside of securities regulators' traditional missions. This emerging type of disclosure regulation empowers civil society to influence firms' actions through public pressure. We study the SEC's extraction payments disclosure rule, which requires oil and gas firms to publish details about their payments to host governments. Consistent with reputational costs for affected firms, our event-study results document that the rule's negative effect on firm value is stronger where greater reputational risk makes firms more vulnerable to public pressure. Our qualitative field evidence suggests that reputational costs arise because the required disclosures facilitate pressure groups' campaigning. These findings are robust to several alternative explanations and research design choices.

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## I.   INTRODUCTION

In this paper, we document the reputational costs of targeted disclosure regulation. Like other securities regulators, the SEC aims to "protect investors, maintain fair, orderly, and efficient markets, and facilitate capital formation" (SEC 2013). But going beyond this traditional remit, some recent securities regulation pursues specific public policy objectives – such as combatting corruption or enhancing mine safety – in addition to fostering investor protection. This type of 'targeted disclosure regulation'[1] aims to nudge firms towards socially desirable behavior by exposing them to public pressure. We currently know relatively little about the firm-level costs and benefits of targeted disclosure regulation, as its intended "social benefits [differ] from the investor protection benefits that [the SEC's] rules typically strive to achieve" (SEC 2012, 138).

Empirical evidence on the reputational costs of targeted disclosure regulation is important for three reasons: These costs may (a) conflict with securities regulators' mission to facilitate capital formation, (b) impair the attractiveness of public capital markets (e.g., De Fontenay 2016),

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[1]   Similar terms include "targeted transparency" (Fung, Graham, and Weil 2007), "(government) information disclosure programs" (e.g., Doshi et al. 2013), or "regulation through revelation" (Hamilton 2005).

and (c) cause a shift of business activities from regulated to unregulated (e.g., privately held) firms (Christensen, Hail, and Leuz 2019, 97). As a firm's reputation is a "social approval asset" (Pfarrer, Pollock, and Rindova 2010, 1131), reputational costs comprise all reductions in firm value that arise from exposure to public pressure. Reputational costs can materialize through diverse outcomes (or 'real effects'), such as customer backlash or forced relocation of firms' investments to less profitable projects.

We study the reputational costs of targeted disclosure regulation in the setting of the SEC's Extraction Payments Disclosure (EPD) rule. Rooted in the 2010 Dodd-Frank Act, the EPD rule requires oil and gas firms to publish granular disclosures about payments to the governments of countries they operate in. Exemplifying targeted disclosure regulation, the EPD rule is intended to empower civil society to hold oil and gas firms accountable for their activities. Unsurprisingly, the EPD rulemaking process sparked considerable interest from pressure groups (such as non-governmental organizations and social activists) – as well as fierce resistance from the oil and gas industry. Hence, the EPD rule provides a powerful setting for exploring the costs arising from pressure groups' (intended) use of mandatory targeted disclosures.

We expect the EPD rule to impose reputational costs on affected firms. Mandatory EPDs provide a publicly available and credible information source for pressure groups. The EPD rule should thus reduce pressure groups' marginal costs of threatening harm to oil and gas firms through campaigns. *Ceteris paribus*, this campaigning exposes targeted firms to more severe public pressure and, hence, reputational costs (Baron and Diermeier 2007; Lenox and Eesley 2009). At the same time, the EPD rule is part of securities regulation, which has traditionally been geared towards investors rather than pressure groups. Hence, it is unclear whether mandatory disclosures under securities regulation actually meet pressure groups' information needs (e.g., Christensen et

al. 2019, 7). Therefore, the reputational costs of the EPD rule – and of targeted disclosures more generally – are, ultimately, an empirical question.

We provide two sets of empirical analyses to document the reputational costs of the EPD rule. The first set of analyses is quantitative. We apply the event study method to test whether firms' total net costs due to the EPD rule vary with their exposure to reputational risk. Specifically, exploiting uncertainty during the SEC rulemaking process, we identify twelve events relating to the implementation of the EPD rule (such as the proposal of the rule by the SEC, or a lawsuit leading to its withdrawal). These events likely update investors' beliefs about the implementation of the rule (including its strictness) and, hence, about its effect on firm value. If investors expect the rule to impose reputational costs on affected firms, we expect a negative relation between firms' abnormal returns during event windows and their reputational risk exposure.

To measure firms' reputational risk, we use a third-party rating provided by RepRisk, a commercial environmental, social, and governance (ESG) data provider. This rating captures firms' exposure to reputational risk (rather than their absolute reputation levels).[2] Its key advantage is that it provides cross-sectional, within-industry variation in firms' reputational risk. We expect the reputational costs of mandatory EPD to be more pronounced among firms with higher reputational risk, as these firms suffer greater financial damage from public pressure. Hence, if investors perceive the EPD rule as imposing reputational costs, we expect lower abnormal event returns for firms with lower RepRisk ratings (i.e., higher reputational risk).

Using abnormal event returns to infer the reputational costs of the EPD rule has three advantages. First, they provide a summary measure of the net costs of the EPD rule, and hence for the effective regulatory burden placed on affected firms. Second, they reflect the observable

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[2] Refer to Appendix B for details about the process and sources used by RepRisk to construct the measure.

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implications for firm value of the EPD rule from an *ex ante* perspective, including potential anticipation or deterrence effects on firm behavior.[3] Hence, they are more comprehensive than individual outcomes, such as protests (Franks et al. 2014) or revised investment policies (Rauter 2019), which reflect costs *ex post*. Third, abnormal event returns reflect investors' perceptions, which crucially affect the attractiveness of public capital markets for affected firms.[4]

Our event-study results are consistent with the EPD rule causing net costs on average. Of primary interest, and consistent with reputational costs, abnormal event returns are negatively associated with firms' exposure to reputational risk. Addressing potential alternative explanations, we rule out that our main finding is confounded by firms' exposure to competition, or to expropriation and litigation risk in host countries prohibiting EPD. Taken together, these results suggest that investors perceive the EPD rule as imposing reputational costs on affected firms.

Our second set of empirical analyses mobilizes qualitative field data to document a plausible channel through which reputational costs of the EPD may arise: the (anticipated) use of EPDs by pressure groups. Prior research has largely neglected pressure groups as constituents of securities regulation and users of financial disclosures.[5] Hence, we conducted interviews with pressure group representatives to gain insights into whether and how EPDs would enhance their campaigning, and thereby translate into costs for firms.[6] Our interview partners indicated that mandatory EPDs would provide them with reliable information that would help them back their claims, avoid making false allegations, and enhance the credibility of campaigns. Moreover, the

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3   For example, firms may already adjust their investment policies prior to the EPD rule entering into force (Fiechter et al. 2019, Rauter 2019). Similarly, our interview evidence reveals that pressure groups expected mandatory EPD to deter firms from engaging in presumably illegitimate activities (see Section VI). Such anticipation effects would complicate the (*ex post*) identification of firms' reputational costs around the introduction of the EPD rule.
4   Although investors might err in their expectations about the firm value effects of the EPD rule, these expectations will determine the price investors will bid for a firm's stock, and hence the firm's benefits from raising capital in public markets.
5   A notable exception is Dyreng et al. (2016), which examines public pressure imposed by ActionAid International, a nonprofit activist group.
6   These interviews are reported in section VI and Appendix E.

timeliness and machine-readability of the data would facilitate ongoing monitoring of disclosing firms' activities. Importantly, these properties make mandatory EPD incrementally useful to pressure groups' existing information sources, such as official register information or EITI reports. As a result of enhanced campaigning and monitoring, interview partners expected mandatory EPDs to deter firms from engaging in presumably illegitimate business activities. We triangulate and confirm these interview insights by eliciting pressure groups' revealed preferences from comment letters submitted to the SEC during the EPD rulemaking process.[7]

Our study complements recent research examining the costs and benefits of detailed EPDs. We combine event-study tests with interview evidence from pressure groups to provide new evidence on the reputational costs of mandatory EPD arising from a hitherto sparsely researched user constituency: pressure groups. Doing so, we contribute to recent studies on the effects of targeted disclosure regulation, which transcends capital market regulators' remits and targets non-investor users (Christensen, Liu, Maffett, and Floyd 2017; Dyreng, Hoopes, and Wilde 2016; Grewal, Riedl, and Serafeim 2019; Rauter 2019). These studies document specific outcomes, such as firm value (Grewal et al. 2019), employee safety (Christensen et al. 2017), tax avoidance (Dyreng et al. 2016), as well as extraction payments and investments (Rauter 2019), being affected through different mechanisms. We add to these studies by focusing on reputational costs as an important and potentially unintended cost of targeted disclosure regulation. Using firm value as a summary measure, our results indicate that firms with greater reputational risk experience larger costs, consistent with the EPD rule having more "bite" for these firms through the causal mechanism of reputational costs imposed by pressure groups.

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[7] These analyses are presented in section VI and Appendix E.

## II.   INSTITUTIONAL BACKGROUND

The EPD rule is rooted in securities regulation, with the SEC the regulator in charge. Section 1504 of the Dodd-Frank Act adds a Section 13(q) to the Securities Exchange Act of 1934, mandating the SEC to issue rules requiring resource extraction issuers to disclose details about their payments to governments at the project level.[8] Aiming to address the 'resource curse', the rule's objectives goes beyond the SEC's core mission, making it an exemplar of targeted disclosure regulation. Specifically, the SEC clarified that it intends to "improve transparency … to help combat global corruption and empower citizens of resource-rich countries to hold their governments accountable for the wealth generated by those resources" (SEC 2016, 49361). Regarding the user groups expected to foster this real effect, Senator Lugar, one of Section 1504's sponsors, stated: "Transparency empowers citizens, investors, regulators, and other watchdogs and is a necessary ingredient of good governance for countries and companies alike" (156 Cong. Rec. S3816, 2010; statement of Sen. Lugar). Consistent with these intentions, the rule was fiercely opposed by the oil and gas industry, whereas it was heavily supported by pressure groups.

This mandate left the SEC with considerable discretion regarding the implementation of the EPD rule. For example, the SEC could (1) limit the scope of the rule to certain kinds of payments and/or issuers; (2) vary the granularity of required disclosures via the definition of the term 'project'; and (3) reduce transparency by allowing confidential, non-public filing. This discretion created *ex-ante* uncertainty concerning key features of the SEC's rule, and hence the

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[8]   Specifically, these rules should "require each resource extraction issuer to include in an annual report (…) information relating to any payment made (…) to a foreign government or the Federal Government for the purpose of the commercial development of oil, natural gas, or minerals, including (i) the type and total amount of such payments made for each project (…) relating to the commercial development of oil, natural gas, or minerals; and (ii) the type and total amount of such payments made to each government."(Section 13(q) to the Securities Exchange Act of 1934)

disclosures' usefulness to pressure groups. *Ex post*, the SEC adopted a strict interpretation, with only limited exemptions, and required highly granular extraction payments disclosures.

The EPD rule goes beyond previous disclosure requirements in two important respects. First, it mandates highly disaggregated, project-level information, whereas other frameworks (including the Extractive Industries Transparency Initiative; EITI) yield only voluntary and aggregated, country-level disclosures. Second, the SEC requires disclosures to be compiled in one document attached to the annual report. Such bundled reporting in one document, in contrast to piecemeal disclosures dispersed across several country platforms (as under EITI recommendations), reduces search costs for users. These features render the SEC's EPD rule highly useful for pressure groups' campaigning against oil and gas firms and their activities.

## III.    RELATED LITERATURE AND HYPOTHESIS DEVELOPMENT

**Related Literature**

We relate to two streams of literature. First, prior research has provided evidence on the firm value effects of reporting regulation, in particular accounting standards (e.g., Armstrong, Barth, Jagolinzer, and Riedl 2010; Bowen and Khan 2014; Chircop and Novotny-Farkas 2016; Collins, Rozeff, and Dhaliwal 1981; Espahbodi, Espahbodi, Rezaee, and Tehranian 2002; Joos and Leung 2012; Khan, Li, Rajgopal, and Venkatachalam 2017) and disclosure regulation (Fernandes, Lel, and Miller 2010; Greenstone, Oyer, and Vissing-Jorgensen 2006; Grewal et al. 2019; Lo 2003; Zhang 2007). Using abnormal event returns, these studies assess the aggregate costs (e.g., compliance and proprietary costs) and benefits (e.g., reduced adverse selection) of requirements that aim to protect investors and facilitate price formation. In contrast, by studying the SEC's EPD rule as an exemplar, we provide insights on the net costs of 'targeted disclosure regulation', which

goes beyond securities regulators' traditional mission to protect investors.[9] For this type of regulation, our archival and field evidence highlights the importance of reputational costs, which adds to prior research.

Grewal et al. (2019) and Healy and Serafeim (2019) are closely related to our study, as they explore the firm value effects of ESG and EPD disclosure requirements, respectively. They document that these requirements have negative average effects on firm value. We confirm this negative average effect, consistent with the EPD rule imposing net costs on affected firms. However, our primary aim is to shed light on an important source of cross-sectional variation in these costs: firms' exposure to reputational risk and the resulting reputational costs. By providing field evidence on pressure groups' intended use of mandatory EPDs, we further document a plausible channel through which these reputational costs can arise.

Second, we relate to a stream of management studies on the effect of targeted disclosure regulation, or government information disclosure programs, on firm behavior (Campa 2018; Doshi, Dowell, and Toffel 2013; Fung, Graham, and Weil 2007; Jin and Leslie 2003; Miller, Fugate, and Golicic 2017). This work focuses on the conditions under which information disclosure programs are effective, in terms of affecting specific environmental, health, and other targeted outcomes. Whereas many of these studies focus on firms' disclosures via registers outside capital markets (e.g., the Toxic Release Inventory maintained by the U.S. Environmental Protection Agency; see Hamilton 2005), more recent work has explored the role of mandatory disclosures enforced by securities regulators in promoting non-market outcomes. These studies suggest that mandatory disclosures in capital market reduce tax avoidance (Dyreng et al. 2016), enhance mine safety (Christensen et al. 2017) and improve fiscal revenue collection (Rauter 2019).

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[9] For a comprehensive comparison between disclosure regulation motivated by security regulators' traditional missions and 'targeted' disclosure regulation geared towards public policy objectives, see Hombach and Sellhorn (2019).

We add to these studies by documenting the private costs of information disclosure programs for affected firms – which are ultimately borne by investors. These private costs are particularly important in settings where only a subset of firms (e.g., listed firms) is subject to the information disclosure program. In these settings, the information disclosure mandate might have unintended consequences if it draws stakeholders' attention away from unregulated firms (Cohen and Santhakumar 2007, 601) and leads to a relocation of presumably undesirable activities to unregulated firms (Christensen et al. 2019, 97).

**Hypothesis Development**

We are interested in whether 'targeted disclosure regulation', exemplified by the EPD rule, imposes reputational costs on affected firms. To explore this question, we built upon analytical predictions (Baron and Diermeier 2007; Lenox and Eesley 2009) and empirical evidence (Den Hond and Bakker 2007; Dimson, Karakaş, and Li 2015; Lenox and Eesley 2009; Rehbein, Waddock, and Graves 2004) about strategic interactions between pressure groups and firms.

Pressure groups aim to influence corporate behavior by leveraging public pressure. We refer as 'reputational costs' to all direct and indirect reductions in firm value resulting from firms' exposure to public pressure. First, reputational costs can arise from firms' *actual* exposure to pressure groups' campaigns. For example, Franks et al. (2014) document that oil and gas firms targeted by public protests suffer costs from physical damages or production delays. Similarly, campaigns likely create costs by damaging firms' reputation vis-à-vis suppliers, customers, or employees, making transactions with these stakeholders costlier. Second, reputational costs may arise from the mere *threat of* a campaign. Such threats may prompt firms to take corrective actions to avoid pressure groups' campaigning (for empirical evidence, see Fiechter, Hitz, and Lehmann 2019; Rauter 2019). In fact, our pressure group interviewees highlighted this deterrence effect.

Baron and Diermeier (2007) and Lenox and Eesley (2009) provide analytical frameworks for the strategic interactions between pressure groups ('activists') and targeted firms. In these frameworks, pressure groups stage their campaigns strategically, trading off the costs of campaigning and the benefits from expected changes in corporate behavior. Following these frameworks, we argue that mandatory EPDs facilitate pressure groups' campaigning. First, because mandatory EPDs are publicly available, they reduce pressure groups' information acquisition costs. Second, because mandatory EPDs are regulated by the SEC and provided by the firm itself, they are a credible and reliable information source that pressure groups can refer to in their campaigns.[10] Thus, mandatory EPDs should reduce pressure groups' marginal costs of campaigning, resulting in a greater level of credible harm threatened to target firms (Lenox and Eesley 2009, 49–50). This increase in pressure groups' campaigning, in turn, will lead to greater reputational costs incurred by targeted firms (Dyck, Volchkova, and Zingales 2008). Taken together, we expect:

**H:** The EPD rule imposes reputational costs on affected firms.

Alternatively, one may argue that no reputational costs result from mandatory EPDs. The EPD rule is part of securities regulation, which has traditionally been geared towards the information needs of investors. Thus, it is not clear whether pressure groups are aware of and would use the information provided by mandatory EPDs (e.g., Christensen et al. 2019, 7). Similarly, the business costs caused by intensified campaigning may be immaterial for targeted firms. Hence, the existence of the EPD rule's reputational costs is an empirical question.

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[10]  In Section VI, we provide evidence on the specific information properties of mandatory EPDs that pressure groups perceive as being useful for campaigning.

# IV. RESEARCH DESIGN

**Empirical Challenge and Approach**

To explore whether the EPD rule causes reputational costs, we would ideally compare reputational costs across treatment (control) firms that are randomly assigned to being subject to (unaffected by) the EPD rule. In reality, two challenges prevent us from implementing this ideal design. First, we cannot directly observe firms' reputational costs. Second, firms are not randomly treated with the EPD rule. To overcome the lack of a direct measure of firms' reputational costs, we apply the event study method. Specifically, we measure firms' abnormal returns surrounding regulatory announcements relating to the EPD rule. These abnormal returns provide a summary measure of the total net costs of the rule as perceived by investors, without requiring us to specify particular outcomes through which these costs materialize. In order to explore firms' *reputational* costs, we test for cross-sectional variation in abnormal returns due to firms' exposure to reputational risk. If the EPD rule causes reputational costs, we expect firms with greater exposure to reputational risk to have lower abnormal returns, holding other costs and benefits of the rule constant.[11]

The second challenge − lack of random assignment of the EPD rule − plagues our measurement of firms' abnormal returns. Since all U.S. extractive issuers are subject to the EPD rule, we cannot use a control group of U.S. oil and gas firms to approximate firms' normal returns absent regulatory announcements during our event windows.[12] We address this challenge in our

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[11]  A concern with our reputational risk proxy may be that it reflects other cross-sectional differences, such as those in firms' proprietary disclosure costs or risk profiles. To address this concern about omitted correlated variables, we (i) control for firms' proprietary disclosure costs using various alternative proxies; (ii) provide qualitative evidence from pressure groups, eliciting a plausible mechanism through which reputational costs may arise; and (iii) run our cross-sectional model on a placebo setting where we expect firms to incur proprietary, but no reputational costs.

[12]  One may consider using E.U. oil and gas firms as a control group. However, these firms may compete with regulated U.S. firms, and hence experience *positive* abnormal returns to the regulatory announcements due to

research design by (i) measuring abnormal returns controlling for firms' own average returns during non-event days, contemporaneous market returns, and oil price movements; (ii) checking for confounding events during our event windows; and (iii) testing the sensitivity of our results to the use of alternative and placebo events. In summary, our empirical approach resembles a difference-in-differences design (first difference: event dates versus non-event dates; second difference: high versus low reputational risk) with an *ex* ante perspective.[13]

**Regression Model**

If the EPD rule imposes reputational costs on affected firms (**H**), we expect firms with greater exposure to reputational risk to suffer larger total (net) costs. To test this prediction, we estimate the following regression model:

$$\gamma_i = \delta_1 + \delta_2 REPRISK_i + \delta' X + \varepsilon_i \tag{1}$$

where $\gamma_i$ is a measure of firm $i$'s total costs of the EPD rule, $REPRISK_i$ is firm $i$'s exposure to reputational risk, and $X$ is a vector of firm-specific control variables (see Appendix A).

To measure the dependent variable, $\gamma_i$, we use abnormal stock returns around regulatory event dates. To that end, we estimate the following firm-specific, multivariate regression model in the spirit of Schipper and Thompson (1983), as applied by Chircop and Novotny-Farkas (2016):

$$R_{it} = \alpha_i + \beta_i MKT_t + \varphi_i OIL_t + \gamma_i EVENT_t + \varepsilon_{it} \tag{2}$$

where $R_{it}$ denotes firm $i$'s daily return on date $t$, $MKT_t$ is the CRSP equally weighted market return on date $t$, $OIL_t$ is the return on Brent oil prices on date $t$, and $EVENT_t$ is a signed

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competitive effects. Since this would bias in favor of document negative abnormal returns for U.S. firms (i.e., suggesting greater costs), we do not follow this approach.

[13] We abstain from conducting similar tests for pressure groups' actual campaigning due to difficulties in inferring reputational costs. For example, some of our interviewees (see Section VI) expect that firms with high reputational risk may anticipate the use of its EPD by pressure groups, and take corrective actions (e.g., relocating investments) before the EPD rule takes effect, which will in turn mute pressure groups' campaigning against the firm.

dummy variable equal to one (minus one) if date $t$ falls into the three-day window surrounding any event increasing (decreasing) the likelihood of strict implementation of the EPD rule, and zero otherwise.[14] $\gamma_i$ resembles firm $i$'s shift in abnormal returns (after partialing out comovements with macro-economic shocks, $\beta_i$, and economic fundamentals, $\varphi_i$) during event windows. A negative (positive) value for $\gamma_i$ reflects net costs (net benefits) of a strictly implemented EPD rule, as perceived by investors. We use $\gamma_i$, obtained from a firm-specific estimation of equation (2), as our dependent variable in equation (1).

To measure the cross-sectional variable of interest in equation (1), $REPRISK_i$, we use rating data from RepRisk, a leading research and business intelligence provider (see Appendix B for a detailed description). RepRisk rates firms in terms of their vulnerability to public scrutiny, as reflected in negative stakeholder sentiment measured across various sources (including, e.g., different media sources, NGOs, and governmental bodies). Specifically, RepRisk offers two metrics: a categorical rating (ranging from AAA to D, with AAA indicating low vulnerability) and a continuous index (ranging from 0 to 100, with higher values indicating higher vulnerability). In our main tests, $REPRISK_i$ is a dummy variable that is 1 if the firm fails to achieve a high (i.e., AA or better) RepRisk rating, and 0 otherwise.[15] Under **H** (i.e., if the EPD rule imposes reputational costs on affected firms), we expect $\delta_2$ in equation 1 to be significant and negative.

The control vector, $X$, contains a set of firm characteristics that could be associated with firms' other, non-reputational costs and benefits from the EPD rule as well as differences in investors' information processing. Specifically, we include proxies for a firm's size, number of analysts, corporate governance characteristics (i.e., classified board), geography of their business

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[14] While the market return captures macro-economic shocks, changes in oil price reflect common changes in economic fundamentals of the oil and gas firms in our sample (Bertrand and Mullainathan 2001; Jung 2012).

[15] This roughly corresponds to a median split.

model (i.e., foreign operations), and institutional ownership.[16] To control for cross-sectional correlation due to the single-industry setting and the identical event dates for all sample firms, we calculate standard errors following the approach proposed in Sefcik and Thompson (1986), as applied in similar prior settings (Chircop and Novotny-Farkas 2016; Espahbodi et al. 2002; Frischmann, Shevlin, and Wilson 2008).

## V. EVENTS AND SAMPLE SELECTION

**Description of Events**

We exploit the uncertainty associated with the rulemaking process surrounding the EPD rule by examining stock price reactions to events likely to affect investors' beliefs about the likelihood of strict implementation of the rule. To identify such events, we search the SEC website as well as ABI/Inform and LexisNexis. Table 1 summarizes the relevant events, most of which receive media coverage.[17] Our main event period ranges from the first proposal of the rule by the SEC in December 2010 to a re-proposal of the rule in December 2015. We exclude events predating this period, including those relating to the Dodd-Frank Act in general. Other aspects of the reform, such as new derivative trading rules, likely had a negative impact on our sample firms, but were unrelated to the targeted disclosure regulation we are interest in.

INSERT TABLE 1 ABOUT HERE

We further exclude events occurring subsequent to this period. These include the actual issuance of the final rule in 2016, as the SEC adopted the 2015 proposal without much dispute so

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[16] In the robustness section, we report tests using additional control variables, in particular using alternative proxies for firms' proprietary disclosure costs.

[17] We present and discuss various robustness tests relating to event selection and potential confounding events in the robustness section and provide additional detail on the legislative process and confounding events in Appendix C.

that we do not expect much uncertainty to be resolved by this event.[18] Further, the Congress repealed the EPD rule in 2017. Whereas abnormal returns to our main event dates capture the firm value effects of a strictly implemented EPD rule (as perceived by investors), interpretation of the abnormal returns around the repeal-related events is less straightforward. Overall, while we exclude these events predating and postdating our sample period from our main tests, we present and discuss evidence using additional sets of events in the robustness section.

We include events during which the SEC made simultaneous announcements regarding a closely related rule mandating the disclosure of conflict minerals (s. 1502 Dodd-Frank Act). While not specific to oil and gas firms, the conflict minerals rule is similar in spirit to the EPD rule, as it also requires mandatory disclosures by listed firms to enforce social policy objectives.[19] To account for potential confounding events, we follow Larcker, Ormazabal, and Taylor (2011) and review the 'Business and Finance' section of the Wall Street Journal. Appendix C summarizes excerpts that indicate potential confounding events. Neither market nor oil news seem to systematically coincide with our event dates. There are very few concurrent firm-specific news events, and not all are likely to trigger stock price reactions in the same direction as the respective regulatory event. In conclusion, we do not exclude any event due to confounding news.[20]

**Sample Selection**

Sample selection (Table 2) starts with all firms having returns on CRSP with SIC codes 1300-1399 ("Oil and Gas Extraction"), 2911 ("Petroleum Refining"), or 5172 ("Petroleum and Petroleum Products Wholesales") between June 2010 and December 2015. While the SEC rule

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[18] The reduced dispute about the 2015 proposed rule is, e.g., reflected in constituents' participation in the rulemaking process. The SEC published on its website 364 comment letters on the rule proposed in 2010, but only 64 comment letters on the rule proposed in 2015.

[19] Inferences remain unchanged when we exclude these events (robustness section).

[20] Two news announcements involve sample firms. In untabulated robustness tests, we find that our main results remain quantitatively and qualitatively unchanged if we exclude these two firms from the sample.

also affects mining firms, we focus on oil and gas firms as this allows us to hold industry characteristics largely constant and control for observable common fundamentals (i.e., oil prices).

INSERT TABLE 2 ABOUT HERE

We drop firms with business models outside the rule's scope (e.g., transportation and marketing services) and/or that file forms 20-F/40-F. The former ensures that firms are actually affected by the rule, while the latter mitigates concerns about direct confounding effects unfolding from similar legislation in other jurisdictions, e.g., in Canada and the EU (Johannesen and Larsen 2016). We assess firms' business models based on the descriptions in their 10-K filings. Specifically, we exclude firms that conduct only transportation, marketing, or other ancillary services to the oil industry, as well as refineries without production and exploration activities. We further require firms to have returns on CRSP for all twelve event windows to avoid confounding of our results by differences in sample composition across events. This procedure yields 94 firms for estimating the average market reaction, and 132,105 daily return observations (Panel A of Table 2). For our cross-sectional main analyses, we further drop 23 firms without a RepRisk rating and four firms with missing information on control variables and/or without an unbroken time-series of returns during the sample period, which is required for the Sefcik and Thompson (1986) procedure. These requirements yield 67 firms to test our hypothesis (Panel B of Table 2).

## VI.    EMPIRICAL RESULTS

**Quantitative Event Study Evidence: Reputational Costs of the EPD Rule**

We first document that investors, on average, perceive a negative effect of the EPD rule on firm value, consistent with net costs imposed by the rule on affected firms. Table 3 presents estimates of equation (2) pooled across sample firms. Column (1) is based on the broader sample for average market reactions; column (2) reflects the sample used in the cross-sectional tests of **H**.

The coefficient on *EVENT*, -0.0039 in both cases, is significantly different from zero at the 5% level and corresponds to an average abnormal return of -1.17% over an average three-day event window.[21] While this finding indicates that investors perceive net costs from the EPD rule *on average*, our empirical prediction focuses on cross-sectional variation. Hence, we next test our expectation that the firm-specific coefficients on *EVENT* vary with firms' exposure to reputational risk. Panel B of Table 3 presents descriptive statistics on our reputational risk measures and cross-sectional control variables. 45% of firms face high reputational risk, as indicated by low RepRisk ratings (*REPRISK* = 0). Sample firms have an average RepRisk Index (*RRI*) of 0.35 (normalized to range from 0 to 1, with higher values indicating higher reputational risk). 48% of the sample firms have oil and gas properties outside the U.S. Panel C of Table 3 shows that *RRI* is positively correlated with firm size and the existence of foreign properties, indicating that larger firms and firms operating abroad obtain lower ratings. Further *RRI* is negatively correlated with a measure of sales growth (*SALES_GR*) that reflects securities litigation risk (Kim and Skinner 2012).

Table 4 presents the results of our main tests. We find that firms' reputational risk is significantly negatively associated (at the 5% level) with their abnormal event returns. This is consistent with the EPD rule imposing greater costs on firms subject to higher reputational risk from increased public scrutiny (*REPRISK* = 1). Holding other covariates constant, firms subject to high reputational risk exhibit, on average, 0.27 percentage points more negative abnormal returns

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[21] These results are broadly consistent with the average market reactions documented in Healy and Serafeim (2019), albeit based on slightly different events. Results using the Healy and Serafeim (2019) events are discussed in the robustness section. We present and discuss results for the separate events in Appendix D.

than firms with low reputational risk (*REPRISK* = 0).[22] Taken together, this cross-sectional finding is consistent with our prediction that the EPD rule imposes reputational costs on affected firms.

<div align="center">INSERT TABLE 4 ABOUT HERE</div>

Inferences are the same when we use *RRI*, the continuous RepRisk Index, as an alternative measure of firms' reputational risk (for details, see Appendix B). Following RepRisk's recommendation (RepRisk 2016), we use the maximum value of firms' *RRI* during the sample period. Column (2) of Table 4 reveals that *RRI* is negatively associated with firms' abnormal returns; the coefficient (-0.0087) is statistically significant at the 5% level.

**Qualitative Evidence from Pressure Groups: Origins of Reputational Costs**

Our quantitative event-study results document firms' reputational costs caused by the EPD rule, consistent with the EPD rule empowering pressure groups to hold oil and gas firms accountable for their activities. To shed light on the causal mechanism underlying this effect, this section presents novel direct evidence from (1) ten semi-structured interviews with representatives of pressure groups campaigning in the oil and gas extraction sector (see Table E1 in Appendix E), triangulated with (2) comment letters submitted to the SEC during the rulemaking process (see Table E2 in Appendix E). We show that pressure groups actively follow EPD rulemaking and, due to the distinct information properties of these disclosures, regard them as useful and easy-to-access sources of information that would be helpful in deterring illegitimate conduct by extraction firms.

Pressure groups' intense lobbying in the rulemaking process reflects acute awareness of the EPD requirements and a preference for strict implementation of Section 1504 (see Table E2 in Appendix E). Several interviewees related that they would acquire the new disclosures, once

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[22] With respect to the control variables, the coefficient on *SIZE* is positive and statistically significant, consistent with smaller firms facing disproportionally higher costs of implementing the rule. The other control variables are not significantly associated with firms' abnormal returns.

available, as they regard them as useful in their decision-making. This usefulness stems from specific informational attributes. Specifically, the quotes reported in Panel A of Table E1 and pressure groups' involvement in the SEC's rulemaking process document that pressure groups expected these disclosures to be superior to previously available information in terms of reliability and credibility (including auditing), timeliness, low acquisition and processing costs, granularity, comparability, as well as consistency.

Reliability of information is important, as pressure groups' need to avoid the risk of making erroneous statements or accusations in their campaigns. In contrast to third-party information, firms cannot easily dissociate themselves from their own disclosures, or cast doubt on their reliability. In terms of granularity, the required project-level disclosures of payments to governments allow the identification of illicit activities that are currently costly or impossible to uncover. They further facilitate assessing and monitoring firms' impact on (specific) local communities, which is difficult to derive from the aggregated firm-level data previously available. Further, several interviewees indicated that data availability and access are significant challenges, with relevant data often costly to obtain, and stressed that the new rule would create a public source of freely available and easily accessible (i.e., machine-readable) data. Overall, pressure groups report that several informational attributes of the new EPDs would have made them a useful source of data, indicating that pressure groups would in fact have used that data.

Pressure groups further indicated that the EPD would help their campaigns towards enhanced government and corporate accountability, but also higher labor-safety and human-rights standards.[23] As a result, pressure groups believe that a deterrence effect would emanate from the

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[23] Anecdotal evidence further supports the notion that project-level disclosures provide valuable information incremental to other sources available to advocacy groups. In 2016, the "Keep it in the Ground" movement pressured the Interior Department to withdraw a planned oil and gas lease sale. Similar campaigns could use project-level information on exploration licenses to pressure firms and regulators to increase payments to local communities, resulting in additional costs to be borne by firms. Similarly, advocacy groups have taken local actions

EPD requirements. This deterrence effect would be consistent with increased payments to governments as well as revised investment policies, both causing business costs for affected firms.

Taken together, our qualitative evidence suggests that mandatory EPD cause reputational costs for affected firms because they facilitate campaigning and monitoring by pressure groups. Further, the importance of deterrence effects suggests that it is not only pressure groups' *actual*, but rather their *expected* campaigning and monitoring that can impose reputational costs on affected firms. This notion supports our event study research design, which captures all costs of the EPD rule as perceived by investors *ex ante*.

**Addressing Potential Alternative Explanations**

An important concern is that *REPRISK* could be correlated with net disclosure costs other than those arising from firms' vulnerability to public pressure. Two potential sources of such costs emerge from firms' comment letters and our interviews. First, firms active in foreign jurisdictions could face litigation and expropriation risk vis-à-vis host governments. Second, competitors not subject to EPD regulation could learn about profitable investment opportunities from mandated EPD. Where sample firms' foreign risks and/or exposure to competition correlate with *REPRISK*, this could confound our inferences related to **H**.

*Litigation and Expropriation Risk*

First, we explore whether the relation between *REPRISK* and the firm value effect of EPD regulation reflects risks associated with firms' resource extraction activities in foreign countries. Two types of such risks are discussed in the literature: (a) Host country legislation or confidentiality clauses in exploration contracts could prohibit the type of disclosures mandated

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against oil drilling and exploration operations for social, safety, or environmental concerns, pressuring for stricter regulation (e.g., Carlton 2016). Information at the project-level likely provides a useful reference point for local activities (e.g., to pressure for increased contribution to local communities or payments to compensate for negative environmental impact).

under the EPD rule, exposing firms that operate in such jurisdictions to legal risks.[24] (b) The large

investments that oil and gas exploration activities require expose firms to the risk of expropriation

by host governments (Healy and Serafeim 2019). To rule out these alternative explanations, we

rerun our main analyses on a subsample of firms with oil and gas properties located only in the

U.S., as these firms should not be subject to foreign litigation and expropriation risks. Yet, U.S.-

only firms' EPD should still reveal new and useful information to pressure groups, i.e., expose

firms to reputational costs. For example, the Office of Natural Resources Revenue (ONRR) states

in a comment letter to the SEC that mandatory EPD would be "very useful to ONRR as it seeks to

ensure that energy companies are reporting correctly and paying every dollar due to the American

taxpayer." (Office of Natural Resources Revenue 2011) This information would arguably have

facilitated pressure groups' campaigning against firms' domestic operations. The 'Keep it in the

Ground' movement, which has pressured the Interior Department to withdraw a planned oil and

gas natural lease sale (Anonymous 2016), stands example for such campaigning against U.S.

operations based on local information. We exploit U.S.-only firms' differential exposure to such

campaigning, holding their exposure foreign legal and expropriation risks as well as unregulated

foreign competitors constant.

Conditioning on U.S.-only operations reduces our sample to 35 firms. Whereas this implies

reduced test power, we still observe meaningful variation in *REPRISK* across firms (with 29% of

firms having high *REPRISK*; interquartile range of *RRI:* 0.25 to 0.38; untabulated). Moreover, the

average market reaction is of similar magnitude and strength as for the full sample of firms

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[24]   We note that the existence and magnitude of such risks were heavily debated by firms and pressure groups during
the rulemaking process. For example, in a comment letter to the SEC, the advocacy group Oxfam cites extensive
evidence showing "that extractive contracts typically provide for stock market and other required disclosures
notwithstanding general confidentiality obligations". It references the Association of International Petroleum
Negotiators' (AIPN) model form confidentiality agreement, concluding that "the SEC should bear in mind that the
AIPN industry standard terms already accept disclosure of information required to be disclosed by 'governmental
order, decree, regulation or rule,' such as the Final Rule implementing Dodd-Frank Section 1504." (Oxfam
America 2012)

(coeff.: -0.0047; *t*-stat: -2.46; untabulated). In the cross-section, column (3) of Table 4 shows that reputational risk continues to be statistically significantly and negatively related to firms' abnormal returns. The coefficient remains of similar magnitude as in the main results (-0.0029). However, statistical significance drops to the 10% level (*t*-stat: -1.76) , likely reflecting the stark reduction in sample size. These findings mitigate concerns that the relation between firms' reputational risk and abnormal returns is confounded by disclosure costs due to foreign legal risks.

*Proprietary Costs*

Second, we explore whether our main finding is driven by the EPD introducing proprietary costs that are correlated with firms' reputational risk. To the extent that these costs arise from a competitive disadvantage of our sample firms vis-à-vis foreign competitors, and assuming that exposure to foreign competition is lower in the U.S., the U.S.-only analysis described above already alleviates this concern. To address it further, we exploit an alternative setting. Specifically, we rerun our analyses using a disclosure regulation characterized by prominent proprietary cost concerns among oil and gas firms, but of comparatively little interest to pressure groups: the SEC's 'Modernization of Oil and Gas Reporting' (MOGR) rule.

In 2008, the SEC issued a final rule that required information on oil and gas reserves at a more granular geographic level (for detail, refer to Appendix F and Badia, Duro, Jorgensen, and Ormazabal (2019, Appendix B)). In the rulemaking process, industry participants raised concerns that the newly required disclosures could cause competitive harm if used by rivals. Badia, Duro, Jorgensen, and Ormazabal (2018) show that the tightened disclosures provided useful information for peers' investment decisions. In contrast to the EPD rule, the MOGR did not attract much attention from pressure groups. In particular, we did not find any comment letter submitted by a pressure group relating to the MOGR rule. In conclusion, whereas proprietary costs featured

prominently in discussions surrounding the MOGR rule, reputational costs and public scrutiny did not.

We exploit this presence of strong proprietary, but weak reputational costs relating to the MOGR rule to assess whether our main finding is driven by *REPRISK* capturing investors' concerns about proprietary costs emanating from the EPD rule. If *REPRISK* mainly captures proprietary costs, we expect it to be negatively associated with firms' abnormal returns to regulatory announcements surrounding the MOGR rule. If, however, *REPRISK* mainly captures reputational risk, we do not expect to find a significant association with firms' abnormal returns during MOGR-related event windows. In that sense, we use the MOGR-related events to conduct a placebo test.

Table 5 presents cross-sectional analyses of the firm value effects of the MOGR rule. We have return data for the period 2007–2009 for 57 of the 67 firms in our main sample. Whereas this reduces our sample size for the MOGR-related tests, column (1) replicates our main findings for the EPD rule using these 57 firms. However, we *fail* to find a significant association between *REPRISK* (column 2) and the firm value effects of the MOGR rule, mitigating concerns that *REPRISK* is confounded by proprietary costs.

INSERT TABLE 5 ABOUT HERE

The results remain unchanged when we (a) use abnormal returns relating only to the initial proposal of the MOGR rule, which, for the first time, mentioned granular geographical disclosures (column 3) and (b) exclude Exxon from the sample, as a court ruling affecting Exxon fell into one of our event windows (untabulated). Overall, the results in Table 5 are consistent with mandatory disclosures causing reputational costs to affected firms where pressure groups can be expected to use these disclosures to campaign against firms. In this respect, the EPD rule differs importantly

from other types of disclosure regulation (such as the MOGR rule) that are more strongly motivated by a price efficiency (rather than stakeholder empowerment) rationale.[25]

**Robustness Tests**

*Placebo Analyses to Mitigate Concerns about Confounding Events*

Several aspects of our main tests mitigate concerns about confounding events. In particular, we (1) fail to find specific confounding news on the event dates (Appendix C), (2) use variation from events that decrease versus increase the likelihood of a strict EPD rule, and (3) control for market and oil price movements in the multivariate regression model. Yet, to the extent that general market trends are (a) not adequately captured by the controls in the multivariate model and (b) correlated with firms' reputational risk, they could confound our inferences. Specifically, the later part of our sample period shows rapid decline in both oil prices and oil stocks, coupled with most events increasing, rather than decreasing, the likelihood of strict implementation of the EPD rule.

To assess the sensitivity of our findings to concerns about confounding market trends, we compare our results to the outcomes of placebo tests using non-event dates falsely assigned as event dates (Armstrong, Barth, Jagolinzer, and Riedl 2010). If some general market trend affects our results, we expect the outcomes of these placebo tests to closely mirror the results of our main tests. In our placebo tests, we estimate the portfolio-specific regression of each cross-sectional determinant as in equation (1) using twelve randomly selected placebo event dates. We perform this task 1,000 times using different, randomly assigned placebo event dates. For our variable of interest (*REPRISK*), only 5 out 1,000 placebo coefficients have a *t*-statistic that is lower (i.e., more negative) than the *t*-statistic of our original specification using true event dates (*t*-stat.: -2.39). In

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[25] We caution, however, that the lack of a statistically significant association (i.e. our failure to reject the Null hypothesis of no association) cannot unambiguously be attributed to *REPRISK* not capturing proprietary costs, but could also be driven by other features of the MOGR setting (e.g., low number of events, although all events can be regarded as visible to investors as they received press coverage by the Wall Street Journal).

conclusion, the associations between abnormal returns and reputational risk on event dates are significantly different from placebo outcomes obtained on non-event dates. This finding mitigates concerns that our main results reflect some underlying market trend not adequately captured in the multivariate regression model.

*Sensitivity to Alternative Event Selections*

We further assess whether our inferences are robust to using alternative sets of events (untabulated). First, we exclude four events that may also relate to conflict minerals disclosures. The coefficient on *REPRISK* remains of very similar magnitude and statistical significance (coeff.: -0.0028; *t*-stat: -2.07). Thus, the notion that the EPD rule has a larger impact on firm value for firms with higher reputational risk does not seem to hinge on events that may also be related to conflict minerals regulation.

Second, we repeat our analyses including different additional events prior to our sample period surrounding the Dodd-Frank Act. We do not include events relating to the Dodd-Frank Act in general in our main sample period, because other aspects of the Dodd-Frank Act, such as new derivatives trading rules, might affect oil and gas firms disproportionally (e.g., because of their commodity risk), but were unrelated to the notion of targeted disclosure regulation we are interested in. To assess the sensitivity of our results, we use events related to the Dodd-Frank Act as identified by Healy and Serafeim (2019) and Gao, Liao, and Wang (2018), respectively. While the coefficient on *REPRISK* decreases slightly in magnitude and statistical significance (coeff.: -0.0020; *t*-stat: -1.99 and coeff: -0.0017; *t*-stat: -1.76, respectively), inferences are unchanged.

Third, we explore more comprehensively to what extent our results are sensitive to the selection of events. To that end, we repeat our estimation of the average market reaction (equation (2)) and cross-sectional analyses (equation (1)) using only eleven out of our original twelve events. Specifically, we randomly exclude one event at a time and repeat our tests using only the remaining

eleven events, yielding eleven sets of additional tests. In only one out of twelve specifications (i.e., when dropping event #9), the coefficient on *REPRISK* is statistically insignificant. Overall, our inferences remain largely unchanged.

Finally, we explore market reactions to the repeal of the rule under the Congressional Review Act in early 2017. We identify four events related to the repeal. During the first weeks of the Trump administration in early 2017, the U.S. Congress used the Congressional Review Act as a legislative tool to roll back several pieces of financial regulation. Following a public statement by the House majority leader McCarthy on 25 January 2017 (event #1), the House and Senate approved a joint resolution to repeal the SEC's extraction payments disclosure rule during a three-day window in February 2017 (passing of the joint resolution by the House: February 1, 2017; event #1; senate vote to repeal the rule: February 3; event #3). President Trump signed the repeal into law on 14 February 2017 (event #4), sending the SEC back to the drawing board. We caution that expectations regarding how investors' perceptions about disclosure costs and benefits map into market reactions are less clear for the repeal-related events that postdate our main sample period. On the one hand, the repeal could create benefits for firms due to the reduced likelihood of a strict EPD rule and associated lower costs. On the other hand, the repeal was likely associated with increased uncertainty about the subsequent regulatory process[26] and concerns about comparability with international peers.[27] Accordingly, the market reactions to the repeal may capture costs and benefits other than those reflected in those to the original events. In addition, events relating to the repeal cluster narrowly in late January and early February of 2017, and are partly confounded by concurrent announcements on other regulatory issues as well as other events

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[26] This is because the repeal essentially sent the SEC back to the drawing board. In particular, Congress did not repeal section 1504 itself, so that the repeal required the SEC to draft a new EPD rule, the attributes of which were unclear at the events dates related to the repeal.

[27] By 2017, most other jurisdictions (including the EU and Canada) had already adopted mandatory extraction payments disclosures similar to those intended by the SEC.

(e.g., Exxon's earnings announcement). We first determine the average market reaction to events surrounding the repeal of the rule by estimation equation (2) using a period ranging from January 2016 to March 2017. The coefficient on *EVENT* is not statistically different from zero (coeff.: 0.0033; *t*-stat.: 1.39). Further in contrast to the results for our main sample period, we fail to find a significant relation between *REPRISK* and the firm value effects for the repeal-related events (coeff.: -0.0032; *t*-stat: -1.01).

### *Sensitivity to Additional Control Variables*

Next, we explore the sensitivity of our main results to the inclusion of additional control variables (untabulated). These tests aim to further mitigate concerns that the relation between firms' abnormal return and their exposure to reputational risk is confounded by other firm characteristics that, in turn, also influence firms' disclosures costs and benefits.

First, we further account for differences in firms' business models by controlling for firms' share of developed reserves. We expect firms' share of developed reserves to capture differences in their business models and investment risk. Specifically, firms with a higher share of developed reserves should be less risky, as lower future capital investments are needed to generate cash flows from these reserves. Since these firms may incur lower proprietary costs from disclosing detailed information on their activities, we expect a positive sign. Second, we control for firms' sales growth and standard deviation of cash flows to capture differences in firms' litigation and business risk (Kim and Skinner 2012) and, third, for firms' effective tax rate to capture differences in their tax planning activities. Fourth, we control for firms' proprietary costs measured by the proxy for competition developed in Li, Lundholm, and Minnis (2013) to mitigate concerns about correlated proprietary costs. Fifth, we use the offshore activity measure provided by Hoberg and Moon (2017), rather than our *FOREIGN* dummy, to proxy for firms' exposure to foreign activities.

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Untabulated results reveal that our inferences related to *REPRISK* remain unchanged when we additionally control for firms' shares of developed reserves in total oil and gas reserves (coeff.: -0.0039; *t*-stat: -2.68), firms' sales growth and standard deviation of cash flows (coeff.: -0.0026; *t*-stat: -2.22), firms' effective tax rates (coeff.: -0.0027, *t*-stat: -2.45), firms' exposure to product market threats (coeff.: -0.0023; *t*-stat: -1.92), or firms' exposure to offshore activities (coeff.: -0.0022; *t*-stat: -2.15). Taken together, these sensitivity tests suggest that our main inferences are not confounded by these other firm attributes.

### *Sensitivity to Other Research Design Choices*

Finally, we gauge the robustness of our results to other research design choices (untabulated). Our results are not sensitive to the assumption that the return-generating process assumed in equation (2) is stationary throughout our sample period. Specifically, the coefficient on *REPRISK* remains of very similar magnitude and statistical significance (coeff.: -0.0027; *t*-stat: -2.42) when we include a separate intercept for each year (allowing firms' returns on non-event dates to differ across years) and interact the coefficients on the market return and oil price changes ($\beta_i$ and $\varphi_i$) with year indicators. Similarly, our inferences with respect to *REPRISK* are robust to extending the event window to range from the day before to two days (instead of one) after the announcement (coeff.: -0.0027; *t*-stat: -2.39), or to computing abnormal returns using value weighted, rather than equally weighted, market returns (coeff.: -0.0027, *t*-stat: -2.43) .

## VII.   CONCLUSION

This study investigates disclosure costs related to targeted transparency – an emerging form of disclosure regulation aimed at empowering civil society to impose public pressure on firms – in the context of the SEC's extraction payments disclosure (EPD) rule. We provide quantitative event-study tests and qualitative field evidence to elucidate a specific channel through which

detailed disclosure regulation can operate, namely by empowering pressure groups to impose reputational costs on disclosing firms.

Our event-study results suggest that investors expect the EPD regulation to be relatively more costly for firms exposed to higher reputational risk. This finding is consistent with investors expecting pressure groups to use mandated EPD to impose reputational costs on oil and gas firms by forcing them to internalize negative externalities. Our field evidence confirms and illuminates these results. Specifically, pressure groups' stated and revealed preferences strongly support detailed EPD, as these would facilitate campaigning against corporate wrongdoing, while oil and gas firms are opposed.

These results are subject to the following limitations. First, RepRisk data are not comprehensively available for all firms. Hence, our cross-sectional findings may not generalize, especially to smaller firms for whom reputational costs due to public scrutiny might be less of a concern. Second, a similar caveat applies to the generalization of our results to other industries, given that the extractive industry attracts particularly high attention by regulators, pressure groups, and the public. Finally, isolating the specific mechanisms through which reputational risk can affect firm value is challenging. While we provide initial archival and interview-based evidence that capital market information can provide a valuable source of information for pressure groups, future research should explore the necessary and sufficient conditions for pressure groups using this information effectively. These insights are important for assessing the efficiency and effectiveness of capital market regulation geared toward public policy objectives – with targeted disclosure regulation a key example.

## Appendix A: Variable Definitions

| Name | Description | Source |
|------|-------------|--------|
| *Panel A: Measuring abnormal returns* | | |
| R | A firm's daily return | CRSP |
| MKT | CRSP equally-weighted daily market return | CRP |
| OIL | Daily change in Brent oil prices | EPA |
| EVENT | Pooled, signed event dummy variable, taking the value of 1 (-1) during the three-day event window surrounding events increasing (decreasing) the likelihood of strict implementation of the EPD rule (events defined in Table 1). | Own calculations |
| ABN_RET | A firm's abnormal return on an average trading day during a three-date event window, as measured by $\gamma_i$ estimated from equation (2). | Own calculations (equation (2)) |
| *Panel B: Cross-sectional determinants of abnormal returns* | | |
| REPRISK | A dummy variable that is 1 if the firm fails to achieve a high reputational risk rating (AA or better), and 0 otherwise. (Static during 2010-2015) | RepRisk |
| RRI | A firm's Reputational Risk Index as computed by RepRisk, scaled to range from 0 to 1. (Maximum for years 2010 – 2015) | RepRisk |
| SIZE | A firm's size, measured as the log of its market value of equity. (Averaged for financial statements published 2009 - 2015) | CRSP/Compustat merged (annual) |
| ANALYSTS | A firm's analyst following, measured as the log of the number of analysts on I/B/E/S. (Averaged for 2010 – 2015) | I/B/E/S |
| CBOARD | A dummy variable that is 1 if the firm has a classified board, and 0 otherwise. (Static during 2010 – 2015) | ISS, proxy statements |
| FOREIGN | A dummy variable that is 1 if the firm reports any foreign properties at the beginning of the sample period, and 0 otherwise. (Measured at fiscal year 2010) | 10-K |
| INST_OWN | A firm's institutional ownership, measured as the ratio of shareholdings by 13F-filers to total shareholdings. (Averaged for reporting dates 2010 – 2015) | Factset Ownership (LionShares) |
| DEV_RES | A firm's share of developed reserves, measured as the ratio of developed reserves over total proved (i.e., developed and undeveloped) reserves. (Averaged for financial statements published 2009 – 2015). | Compustat (industry-specific) |
| SALES_GR | A firm's yearly sales growth, winsorized at the 5% level. (Averaged for financial statements published 2009 – 2015). | CRSP/Compustat merged |
| STD_CF | A firm's standard deviation of cash flows. (Averaged for financial statements published 2009 – 2015). | CRSP/Compustat merged |
| ETR | A firm's effective tax rate, winsorized at the 5% level. (Averaged for financial statements published 2009 – 2015). | CRSP/Compustat merged |
| OFFSHORE | A dummy variable that is 1 if the firm has offshore activities relating to internal inputs, and 0 otherwise. (Averaged for 2010-2015). | Hoberg and Moon data library |
| COMPETITION | A 10-K –based competition measure provided by Li et al. (2013). (Measured at fiscal year 2009). | Feng Li's website |

**Appendix B: Description of RepRisk Rating Data**

Founded as a due diligence service for institutional investors, RepRisk collects data on firms' environmental, social, and governance-related (ESG) issues from a broad set of sources including the media, NGOs, and other third-party references. RepRisk data are employed by banks and equity analysts to assess their customers' exposure to reputational risks (Luo, Wang, Raithel, and Zheng 2015) and form an important input for firms' assessment for inclusion in sustainability indices such as the Dow Jones Sustainability Indices (RepRisk 2014). Research in accounting, finance, and management has only recently begun to make use of these data (Cui, Jo, and Na 2018; Gloßner 2019; Kölbel, Busch, and Jancso 2017).

RepRisk screens 80,000 sources for a broad set of ESG information. Using a proprietary algorithm and expert analysts, RepRisk quantifies the information into metrics that reflect firms' exposure to stakeholder criticism (RepRisk 2016). Specifically, RepRisk offers two metrics: The RepRisk Indicator (RRI) is constructed from news about negative ESG-related issues, taking the severity of the risk incident and its visibility into account. The RepRisk Rating (RRR) builds upon the RRI and is further adjusted for a firm's country-sector ESG risk exposure to facilitate benchmarking.

These RepRisk metrics exhibit two desirable features for the purpose of our study. First, they are asymmetric in that they capture negative stakeholder sentiment, but neglect positive news. Thus, they focus on firms' downside risk from controversial relations with their stakeholders. Second, RepRisk emphasizes that these measures capture firms' exposure to *reputational risks*, rather than their *actual level of reputation* (RepRisk 2016, 7). Focusing on reputational risk is consistent with the basic premise of our prediction, i.e., investors expecting relatively larger costs for firms where the public pressure exercised by pressure groups is expected to have a larger impact – including due to higher reputational risk.

**Appendix C: Further Detail on EPD-Related Events**

Following the statutory mandate of the Dodd-Frank Act, the SEC released an initial proposal in December 2010 (event #1). The proposal indicated the SEC's intention to pursue a strict implementation, refraining from making any general exemptions (e.g., with respect to certain types of payments or issuers). The proposed rule triggered heated controversy among various constituents. While industry participants and their interest groups suggested limiting the scope of the rule (e.g., with respect to commercially harmful or otherwise sensitive information[30]), pressure groups strongly opposed granting any exemptions, arguing that this would undermine the regulatory intent of the rule, and would allow foreign governments to prevent disclosure by issuing legislation prohibiting it. In addition, they argued that only granular public disclosures, e.g., at the contract level, would empower citizens to hold extractive issuers and governments accountable.

Given the considerable controversy about the strictness of implementation, the SEC had not issued a final rule until more than a year after releasing the proposal, which resulted in the pressure group Oxfam announcing (event #2) and filing (event #3) a lawsuit in April and May 2012, respectively. As Oxfam pressured for strict and timely implementation of the EPD rule, we consider both events likelihood-increasing. In August 2012, the SEC adopted a final rule with a close vote (2-1) (event #4). In this final rule, the SEC continued to pursue a strict implementation of the rule (e.g., by not granting exemptions regarding certain types of payments or issuers).

The final rule was challenged in October 2012 when the American Petroleum Institute (API), together with other business groups, filed lawsuits with both an appeals and district court against the SEC (event #5). These legal actions aimed at influencing the SEC to relax the rule (in particular, to limit public disclosure of the information), and thus decreased the likelihood of a strict implementation. The SEC, however, adhered to its final rule of 2012 and issued an order denying a motion to stay the rule (event #6), and one of the courts, the US Court of Appeals in Washington, rejected API's lawsuit (event #7).

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[30] A letter to the editors of the Wall Street Journal entitled "The Dodd-Frank Threat to U.S. Energy" by API president Jack Gerard echoes these concerns, emphasizing potential disadvantages vis-à-vis foreign (in particular, Russian) state-owned companies in times of "a fragile recovery with 8.3% unemployment" (Gerard 2012).

In July 2013, the EPD rule was vacated by the U.S. District Court of Columbia (event #8), followed by a similar vacation of the conflict minerals rule (event #9). In the memorandum opinion accompanying the court ruling, the District Court of Columbia stated that the withdrawal of the EPD rule was due to two substantial errors: (1) the SEC's claim that Section 1504 of the Dodd-Frank Act left no discretion to the SEC to require *public* disclosure of the reports; and (2) the SEC's explanation on its decision to deny any exemption, e.g., where payment disclosure is prohibited by host countries.[31] Weakening the SEC's position vis-à-vis industry opponents, we regard the court decisions to decrease the likelihood of a strict implementation of the EPD rule as perceived by investors.

Following the withdrawal of the rule, the SEC went into lengthy reconsiderations. In September 2014, Oxfam filed a lawsuit with the US District Court of Massachusetts to speed up the SEC's rulemaking process (event #10).[32] In September 2015, the US District Court of Massachusetts responded to Oxfam's lawsuit and ordered the SEC to file an expedited schedule for promulgating the final rule, putting additional pressure on the regulator (event #11).

Finally, in December 2015, the SEC re-proposed a revised rule (event #12). Notably, the new rule continued to include public disclosure requirements for payments to governments at the project level. However, it allowed for exemptions on a case-by-case basis and upon application where payment disclosures are prohibited by law or subject to contract confidentiality, and granted relief to firms meeting "substantially similar" disclosure requirements in other jurisdictions. At the same time, the SEC adopted a granular formal definition of the term 'project' without any materiality constraint. Given the limited exemptions and the granular definition of the disclosure requirements, we regard this last event to increase the likelihood of a strict

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[31] See Memorandum Opinion, American Petroleum Institute, et al. v. Securities Exchange Commission and Oxfam America, Inc, Civil Action No. 12-1668 (JDB) (2 July, 2013).

[32] However, against the background of similar regulatory developments in the UK, EU, and Norway, Oxfam's second lawsuit was more positively perceived by industry participants in need for legal certainty and pushing for international convergence. As stated in an article published by the Financial Times: "In the meantime, the EU and Norway have adopted disclosure laws while the UK has issued draft regulations. Because oil companies will have to follow those measures, companies such as Exxon changed their stance on the SEC efforts and recently urged the agency to quickly formulate its proposal so there can be consistency across geographies and to ensure a level playing field." (Financial Times, 19 September 2014, p. 19).

implementation of the EPD rule as perceived by investors. However, we acknowledge that, given the relaxations in the proposed rule as of 2015 and the concurrent legislative developments in other jurisdictions, investors might anticipate relatively lower costs from the re-proposed rule compared to the originally proposed rule. Nonetheless, we include this event in our sample period, noting that such downward revision of disclosure costs would bias against finding a significant negative market reaction. We, however, do not expect much uncertainty to be resolved by the publication of the final rule in 2016. --The final rule followed the proposal in most aspects. Moreover, the SEC received few comment letters on the proposed rule, suggesting that there was not much dispute about this final step (after the publication of the proposal).

To judge confounding events during our event periods, Table C1 below presents headlines from the "Business and Finance"-Section of the Wall Street Journal, following Larcker et al. (2011).

**Table C1:** Potential confounding events

*Note:* This table describes potential confounding events concurring with the event dates. Following Larcker et al. (2011), potential confounding events are identified from the 'Business and Finance' section of the Wall Street Journal on the date after the event date. The table presents excerpts of this section that relate to general market activity, monetary policy, the extractive industry, or events that could relate to firms' exposure to public scrutiny (such as work strikes).

| # | Likelihood | Wall Street Journal 'Business and Finance' Section |
|---|---|---|
| 1 | Increasing | The Dow industrials fell 19.07 points to 11457.47 on concerns about euro-zone finances. European and Asian stock markets closed mostly lower and the euro sank. U.S. inflation remained low in November despite signs of a strengthening recovery. Industrial production saw its largest gain in four months. |
| 2 | Increasing | The Dow industrials rose 71.82 points, or 0.6%, to 12921.41, while Apple's decline pulled other major benchmarks into the red. Chesapeake Energy's oil-field services unit plans to go public as a separate firm as its parent continues to shed assets to raise cash and cut debt. |
| 3 | Increasing | The Dow industrials fell for a fourth straight day amid confusion over Greece's political future, losing 33.45 points, or 0.3%, to 12598.55. Federal Reserve officials were worried about risks to the economic recovery when they decided in April to stick to their easy-money policies. |
| 4 | Increasing | Stocks pared losses amid hopes for action by the Fed, but the Dow industrials ended the session 30.82 points lower at 13172.76. BHP will postpone or scale back projects valued at more than $50 billion, the clearest sign yet that the global mining boom has run its course. Workers clamored for wage boosts at two more platinum companies in South Africa's mining heartland, as a strike continued at a Lonmin mine. |
| 5 | Decreasing | The Dow industrials slid 128.56 points, or 1%, to close at 13344.97 as a disappointing start to the earnings season weighed on investors. BP and the U.S. are close to a deal that would resolve both the firm's civil and criminal liabilities arising from the Deepwater Horizon disaster. |
| 6 | Increasing | The Dow industrials fell for a second day amid worries about the "fiscal cliff," losing 121.41 points to 12811.32. Treasury prices rose. |
| 7 | Increasing | The S&P 500 registered its fifth advance in a row, adding 6.37 points. The Dow industrials and the Nasdaq also recorded gains. Exxon Mobil reported a slight rise in profit for the first quarter, but the energy giant's production of oil and natural gas declined. |
| 8 | Decreasing | Stock markets in the U.S. ended a volatile but low-volume session with losses. The Dow industrials dropped 42.55 points to 14932.41. U.S. oil futures registered a 14-month high, nearing $100 a barrel as prices for domestic crude reconnect with the world market. |
| 9 | Decreasing | Stocks rebounded, snapping a two-day losing streak. The Dow rose 0.9% and the Nasdaq posted a 0.6% gain. |
| 10 | Increasing | Bond-market crosscurrents intensified as the gap between long- and short-term Treasury yields narrowed. The Dow rose 109.14 to a record 17265.99. |
| 11 | Increasing | Stocks rebounded, but traders remained glum as concerns about global growth persisted. The Dow gained 293.03 points, or 1.8%, to 16351.38. Oil firms and traders are storing crude on tankers, seeking to profit on a gap between spot and futures prices. |
| 12 | Increasing | U.S. junk bonds posted their steepest drop since 2011, stoking fears a bull market in stocks and other risky assets is nearing an end. The Dow fell 309.54 points. |

**Appendix D: Average Market Reactions to Individual Events**

We present and discuss results of our multivariate regression model of firms' average market reactions (equation 2) to the 12 regulatory events identified in Table 1. To that end, we decompose the *EVENT* variable into dummies for individual event windows. Table D1 shows that, of the twelve events, five have significant coefficients with the expected signs. One coefficient (relating to event #8) is significant at the 5% level, but not in the expected direction.[33] Overall, results from individual events support the conclusion from the pooled event analysis. Studies employing a similar method also commonly show some lack of significance for individual events (e.g., Bowen and Khan 2014; Chircop and Novotny-Farkas 2016), or individual event date portfolio returns with other than the predicted signs (Armstrong, Barth, Jagolinzer, and Riedl 2010).

**Table D1:** Average market reaction (individual events)

*Note:* This table provides results for the average market reactions relating to individual events. The number of observations is firms' daily returns June 2010 and December 2015. For each of the twelve events identified in Table 1, we include a separate event dummy indicating a three-day window surrounding the event. *t*-statistics in parentheses are based on standard errors clustered by trading date. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. All variables are defined in Appendix A.

|  | Exp. Sign | Individual Events | |
|---|---|---|---|
| MKT_RET | + | 1.3002*** | (32.24) |
| OIL_RET | + | 0.4264*** | (17.51) |
| #1 Increasing: SEC proposes rule | - | -0.0033*** | (-4.12) |
| #2 Increasing: Oxfam announces to sue SEC | - | -0.0081** | (-2.43) |
| #3 Increasing: Oxfam sues SEC | - | -0.0024 | (-0.50) |
| #4 Increasing: SEC adopts final rule | - | -0.0024 | (-1.24) |
| #5 Decreasing: API sues SEC | + | 0.0011 | (0.56) |
| #6 Increasing: SEC issues order denying stay | - | -0.0027 | (-0.46) |
| #7 Increasing: API's lawsuit rejected | - | -0.0080** | (-2.50) |
| #8 Decreasing: Court vacates disclosure rule | + | -0.0040* | (-1.95) |
| #9 Decreasing: Court vacates conflict minerals rule | + | 0.0126*** | (4.77) |
| #10 Increasing: Oxfam sues SEC | - | -0.0032** | (-2.04) |
| #11 Increasing: Court orders SEC to re-propose rule | - | 0.0007 | (0.09) |
| #12 Increasing: SEC re-proposes rule | - | -0.0070 | (-0.68) |
| Constant | ? | -0.0003 | (-1.10) |
| N (# of Clusters) | | 132,105 (1,407) | |
| Adj. R2 | | 0.205 | |

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[33] One potential explanation for the unexpected sign of the coefficient on event #8 could be an unusual behavior in oil prices during the event window. In particular, prices jumped following an announcement of a drop in domestic inventories (see also the news on event #8 in Table C1 in Appendix C). Such highly positive, unusual changes in oil prices could reduce sample firms' abnormal returns. Consistent with this notion, the coefficient on event #8 becomes positive, but insignificant (*t*-stat: 1.26) when we do not control for oil price changes in the regression.

**Appendix E: Pressure Groups' Use of Extraction Payments Disclosures**

**Table E1:** Evidence from Interviews with Pressure Groups

*Note:* This table provides selected quotes from semi-structured expert interviews with representatives of NGOs and other pressure groups campaigning in the oil and gas extraction sector. The quotes are organized into two panels, with each panel related to one of the key causal links underlying our empirical prediction developed in section III. We conducted a total of ten interviews with individuals employed by eight different, international groups and advocacy networks. As anonymity was a condition for access, we are not disclosing their, or the groups', identities. Interviews were conducted between May 2017 and August 2017 by both authors, except in two cases, where only one of the authors was speaking with the subject. Conversations were held over the phone or Skype, audio-taped with the subjects' consent, and later transcribed into text. The interviews ranged between 0:27 and 1:26 hours in length (mean length: 0:52; total length: 8:43 hours) and yielded a total of 68,800 words of transcript.

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*Panel A: Usefulness of EPD to pressure groups, and information properties driving usefulness*

"We are going to have access to detailed information that we would not have had access to before. … if you have this data you can actually do calculations and prove based on the data that you have that your hypothesis [about firms' misconduct] is true."

"... and reliability is hugely important, and … we have .. kind of the need for this information to be ... preferably properly audited. … having something like an audit requirement will make the data more dependable."

"I mean, obviously credibility is one of the most important ones. We want the information we rely on in our research to be as accurate and reliable as it possibly can. … this is why stock exchange disclosures are very useful because, you know, this is coming from the company itself and there are certain legal consequences that attach if that information turn outs not to be accurate. You know, the company can be investigated or potentially held responsible for fraud … there is a level of reliability that stock exchange disclosures have that … other … reports, do not necessarily have the same degree of reliability that is actually backed by law."

"It also the reputation behind the data I think is also quite important, the rigor."

"We want timely, consistent, comparable data in a machine-readable format so that we can easily put datasets together and do the analyses. But we also want for the information that is disclosed to be project-level and of a granular enough nature that it is actually of use to sort of civil society and to citizens, and to investors."

"The timeliness, I think, is... um... is an inherent advantage of these disclosure rules against, for example, the EITI reports."

"Well, I think the biggest challenge for NGOs getting this data is the cost of getting the data. … if the data was related in a way that is freely available, then that would then facilitate NGOs more broadly to be able to act.

"Lots of improvements that we have already identified that needs to take place... tend to be around... um... accessibility... and the fact that lots of people just don't know either that this information is public, or where to find it. And sometimes, ... they will have to find it on that particular company's website ... in the home country of that company's language rather than the host country's language."

**Table E1:** Evidence from Interviews with Pressure Groups (*cont'd*)

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*Panel A: Usefulness of EPD to pressure groups, and qualitative disclosure characteristics driving usefulness* (cont'd)

"We found the actual computer formats have been difficult and inconsistent as well, ... many, many companies are choosing to submit a PDF when they have choice, um, which is often very difficult to take data from that and copy it, or... you know, stick it in a spreadsheet or whatever; it often needs to be manually done. So we basically have been campaigning for data to be open and machine-readable."

"It also needs to be humanly readable. And there is a couple of cases of information … where you need a computer program to be able to read it. And that's sort of missing the point a little bit. So, we need greater accessibility in terms of the actual formats."

"We think it is worth having centralized repositories where you can go and find every company report, rather than having to go to each individual company website or know which exchange it is listed on."

"So a big chunk of my work has been on campaigning for these [transparency] laws to be brought in and for them to be sufficiently... robust and detailed, as to be useful for [our] members."

"Whereas at this point in time you know there is no opportunity at all to ask any questions because we do not know what [the local governments] are getting. The payments are not broken down, we don't see it by project, we don't see it by country. I mean, in some instances we get some information through EITI, but in others when we are not implementing rules like this you get absolutely nothing."

" I think what is important in our work … that investigates particular cases of corruption is that this information and these payments are detailed and specific enough, so the payments can be traced to particular individual transactions. So, they are granular enough. So, it is not just, … for example [example firm] payed this much money in [example country]. That is not going to be helpful to us because it is going to be a huge sum, and we have no way of knowing how that sum is distributed across their many different transactions."

"I think it is really useful for this information to be comparable to other data sets, and I think that's one big challenge we are getting to increasingly find … there is not yet any … data where you have got both EITI reports and mandatory disclosure reports to compare. … I think the comparability of data is really useful."

"One thing that we found as a real discrepancy is a lack of comparability... and a lack of consistency. And ... it is one thing we have been campaigning for ever since the Dodd-Frank Act was first adopted and the first rule brought in in 2012. ... we consider that a good basis for a global level playing field in this particular type of disclosure."

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**Table E1:** Evidence from Interviews with Pressure Groups (*cont'd*)

*Panel B: EPD expected to support pressure groups' campaigning against oil and gas extraction firms' illegitimate actions*

"Whereas at this point in time you know there is no opportunity at all to ask any questions because we do not know what [the local governments] are getting. The payments are not broken down, we don't see it by project, we don't see it by country."

"[The new rule] basically opens up the books for people to do the analyses that they need to do. … They can check that companies are making the payments that they are supposed to be making. You can do a royalties audit. You can do a calculation based on how much production is taking place, and the royalty percentage, … did they actually make the payments they are supposed to."

"I think that we will continue to do the things that we do. We will have additional information to back this up, and then it is harder for companies or governments to deny conclusions when you have that data."

"I think [transparency about extraction payments as proposed by the SEC] has a real deterrent effect. It makes it much harder for both companies and governments to hide what's up to money."

"I think one way which [the new extraction payments disclosures] could make things more complicated [for oil and gas extraction firms] is ... the bribes and illicit payments and so on are harder to make."

"… one of the major components of these laws ... is the deterring effect that it could have on company activities. So we expect that there will be a strong deterrent effect because when companies know that our eyes are on them and that their books are opened up they are really less likely to do shady payments at least of the type that we can see. Um... because we are going to be able to look at that and call them on it. So if there is a random billion dollar payment that goes somewhere it should not, people are going to ask questions."

"In terms of the companies ... I think the decent ones... you know, this will be a deterring effect, or at least the smart ones... this will deter them from engaging in dodgy deals … And for the really nasty companies... this will make it harder for them to do the deals that they do … this will make it much more difficult and may make it easier to catch them … when they are doing dodgy things. … I think overall I think it will have a deterrent effect on the industry and will decrease corruption in that sector."

[Question: What could somebody armed with this information now do to actually make companies change their ways?] "You could go to a government and you could say, you know, you are getting screwed on this deal ... they are underpaying their royalties and are not paying their taxes. You could present them your analysis and make them demand reimbursement from the company. You can go to the companies themselves and say, explain this payment information to us, [it] looks like you are underpaying here, so you give companies the opportunity to respond. If you think that there's been malfeasance or a violation of law you can write to the SEC and ask for FCPA charges to be brought, or ask for other kinds of agency actions to go against the companies. You could go to company shareholders and investors and tell them what is going on and try and make a change somehow with those. You could do a public... a public campaign against the company and ask them to change their behavior. … through the media ... and through citizens."

**Table E2:** Use of Extraction Payments Disclosures by Pressure Groups

*Note*: This table illustrates the expected use of extraction payments disclosures by pressure groups as indicated in their comment letters to the SEC during the rulemaking process.

| Comment Letter | Indicated Use of Extraction Payments Disclosures |
|---|---|
| *Panel A: Improvement of government accountability and allocation of public resources* | |
| Publish What You Pay 25 Feb 2010 | "PWYP works to help citizens in these [resource-rich] countries hold their governments accountable for channeling these revenues through legitimate budget processes and for effectively managing these resources in the interest of national development. To do this, PWYP advocates for revenue transparency as a necessary ingredient for accountability. Specifically, PWYP advocates for mandatory disclosure of the payments made by companies to governments, and disclosure of government receipts. PWYP advocates for the inclusion of these disclosure requirements in national laws, stock market listing regulations, accounting standards, and in the lending policies of financial institutions." |
| EarthRights International 2 Dec 2010 | "Robust revenue transparency that requires disclosure of payments by both operators and non-operating partners of gas projects in Burma, including the U.S. issuer Chevron Corporation, the French issuer Total, S.A., and other U.S.-listed issuers operating in Burma, would enable civil society to understand and investigate if, and how much, money is being expatriated." |
| | "A more detailed understanding of the state's revenues from resource extraction – the regime's main source of foreign income – would enable civil society groups to advocate for increased expenditures that better promote the public interest." |
| *Panel B: Monitoring of firms' social and environmental impact* | |
| World Resources Institute 1 Mar 2011 | "The comments that follow reflect our interest in promoting the development of extractive resources in ways that are environmentally sustainable and that benefit all citizens, including those directly affected by extractive industry operations. We believe that transparency helps to achieve these results. (…) Section 1504 is in line with other U.S. government initiatives to promote access to information, especially in the case of environmental matters." |
| EarthRights International 2 Dec 2010 | "Civil society could use information about the payments companies make to the government in the form of social programs to assess those efforts and work with companies to improve their impact." |
| United Steelworkers 29 Mar 2011 | "Revenue transparency mitigates against an investment environment where benefits accrue to the few while conditions for the many suffer. It is in such closed, opaque environments where the health and safety conditions of workers are poor." |

**Table E2:** Use of Extraction Payments Disclosures by Pressure Groups (*cont'd*)

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*Panel B: Monitoring of firms' social and environmental impact* (cont'd)

| | |
|---|---|
| Greenpeace<br>8 Mar 2012 | "[I]ncreasing industry transparency and accountability will significantly lower government and civil society resources needed to oversee and mitigate the social and environmental impacts of the extractive industry. (…) Decisions about project development are too often made without the best economics or the interests of affected communities in mind, providing short shrift to land-use planning, environmental impact assessments, and public consultation processes. Increasing industry transparency through effective implementation of Section 1504 would reduce the impacts of inadequate local governance practices." |
| EarthRights International<br>26 Jan 2011 | "An ever-increasing number of lawsuits – mostly in the U.S., but also in the courts of several other states – accuse multinational extractive companies of paying security forces for or otherwise being complicit in the commission of gross human rights abuses, including crimes against humanity, war crimes, torture, extrajudicial killing, enforced disappearance, and forced labor. (…) Therefore, the payments companies make to states for security should be reported and explicitly designated to better allow investors to assess the material risk to their investments [from human rights violations]." |

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*Panel C: Monitoring of revenue collection and corporate financial accountability*

| | |
|---|---|
| Office of Natural Resources Revenue<br>4 Aug 2011 | "How the SEC incorporates provisions of that Act and requires energy companies to report their data, could be very useful to ONRR as it seeks to ensure that energy companies are reporting correctly and paying every dollar due to the American taxpayer." |
| Tax Justice Network USA<br>1 Mar 2011 | "Tax Justice Network USA supports transparency and opposes secrecy in international finance. We want companies to be made more open about their financial affairs and to publish data on every country where they operate. Markets work better, and companies are more accountable, in an environment of transparency. Increasing the transparency of payments made by companies in the extractive industries to governments aligns with our greater mission." |
| United Steelworkers<br>29 Mar 2011 | "As a labor union that represents workers at specific sites, we understand the importance of specific project level disclosure. For example, if a company knows what benefits it derives from an operation but won't disclose that to the union, it promotes adversarial relations and increases the likelihood of a labor dispute." |

**Appendix F: Description of the Modernization of Oil and Gas Reporting Setting**

In 2008, the SEC changed its oil and gas reporting requirements ('Modernization of Oil and Gas Reporting,' Release No. 78).[34] Industry participants particularly raised concerns about proposed geographical disclosure requirements. Specifically, the MOGR requires disclosure of a firm's production in individual countries or fields exceeding 15% of total production volume, and of reserves in countries representing more than 15% of the firm's total reserves. (The proposed rule contained even lower thresholds.) The SEC's final rule relaxed these requirements, yielding to industry participants' concerns that field disclosures would cause competitive harm.[35]

The (proposed) detailed MOGR disclosure requirements share similarities with the EPD of interest in our main test, as they require more granular, local information. However, there is a key difference between the two rules. Whereas MOGR was mainly motivated by investors' informational needs, the EPD was also motivated by a stakeholder empowerment objective alien to the SEC's traditional mission. Consequently, MOGR received less attention from pressure groups, which are not a traditional constituent of SEC disclosure regulation.

In our test, we assess the relation between firms' exposure to reputational risk and their abnormal returns around MOGR-related events. We use three key events defined in Badia et al. (2019, Appendix D): the concept release (12 December 2007; event #1), the proposing release (26 June 2008; event #2), and the publication of the final rule (31 December 2008; event #3). For all events, check the headlines from the Wall Street Journal's 'Business and Finance' section to screen for potential confounding events. Our search reveals that two events are potentially confounded by news about Exxon (an announcement of an investment and a court ruling). Our results remain unchanged when we exclude Exxon from our analyses.

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[34] For a detailed overview of the changes introduced by MOGR, please refer to Badia, Duro, Jorgensen, and Ormazabal (2019, Appendix B).

[35] For example, BHP notes in its comment letter of September 5, 2008: „"BHP Billiton Petroleum does not support adoption of the revised definition of geographic area. The requirement as proposed could result in disclosure of potentially confidential information or strategies. Such disclosures could place some companies at a competitive disadvantage, particularly relative to entities not subject to US reporting requirements."

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**Table 1: Overview and Description of Events**

*Note:* This table summarizes events marking the legislative process surrounding SEC rulemaking relating to the extraction payment disclosure (EPD) rule. The first column indicates the number of the events included in the main analysis, and the second column their respective dates. The third column provides a short description of the event. The fourth column indicates the direction into which the event is supposed to affect investors' beliefs about the likelihood of strict implementation of the EPD rule. The last column indicates whether the event has been covered by any of the following sources: Wall Street Journal, Financial Times, or Washington Post.

| No. | Date | Description | Likelihood | Media |
|-----|------|-------------|------------|-------|
| 1 | 15 Dec 2010 | SEC proposes the extraction payments disclosure rule. | Increasing | Yes |
| 2 | 16 Apr 2012 | Oxfam announces to sue SEC for unlawfully delaying the final rule. | Increasing | No |
| 3 | 16 May 2012 | Oxfam files a lawsuit against the SEC for unlawfully delaying the final rule. | Increasing | Yes |
| 4 | 22 Aug 2012 | SEC adopts the final rule. | Increasing | Yes |
| 5 | 10 Oct 2012 | API, together with other business groups, files a lawsuit against the SEC over the final rule with the US Court of Appeals in Washington and the US District Court of Columbia. | Decreasing | Yes |
| 6 | 08 Nov 2012 | SEC issues an order denying a motion filed by API in connection with the lawsuit to stay the final rule. | Increasing | No |
| 7 | 26 Apr 2013 | The US Court of Appeals rejects the lawsuit filed by API and other business groups for jurisdictional reasons. | Increasing | Yes |
| 8 | 02 Jul 2013 | The District Court of Columbia vacates the final rule. | Decreasing | Yes |
| 9 | 14 Apr 2014 | US Court of Appeals vacates a similar rule on conflict minerals. | Decreasing | Yes |
| 10 | 18 Sep 2014 | Oxfam files a lawsuit with the US District Court of Massachusetts to compel the SEC to promulgate a revised final rule. | Increasing | Yes |
| 11 | 02 Sep 2015 | US District Court of Massachusetts orders the SEC to file an expedited schedule for promulgating the final rule. | Increasing | Yes |
| 12 | 11 Dec 2015 | SEC re-proposes the extraction payments disclosure rule. | Increasing | Yes |

**Table 2: Sample Selection**

*Note:* This table describes the sample selection process. Panel A describes the sample selection of firms with available returns data to compute abnormal returns across all event windows. Panel B describes the selection of firms with available data for the cross-sectional main test.

|  | Less | Remaining |
|---|---|---|
| *Panel A: Sample for average market reactions (Table 3)* | | |
| Firms with SIC code 1300-1399, 2911, or 5172 with common stocks on CRSP between 01 June, 2010, and 31 December, 2015 | | 346 |
| Less: firms with a business model outside the scope of the regulation or with 20-F/40-F filings | 158 | 188 |
| Less: firms without returns on all twelve event windows | 94 | 94 |
| Potential observations (94 firms times 1,407 trading days) | | 132,258 |
| Less: missing trading days | 153 | 132,105 |
| *Panel B: Sample for cross-sectional analyses (Table 4)* | | |
| Firms included in sample for average market reaction | | 94 |
| Less: firms not rated by RepRisk | 23 | 71 |
| Less: firms with missing information on controls and trading days | 4 | 67 |

**Table 3: Descriptive Statistics**

*Note:* This table provides descriptive statistics. Panel A shows the computation of our dependent variable: firms' abnormal returns during event windows (equation (2)). Column 1 (column 2) shows results for 94 firms with available returns data (for 67 firms with available data for the cross-sectional analyses). The number of observations is firms' daily returns between June 2010 and December 2015. *EVENT* indicates three-day event windows surrounding the events identified in Table 1. *t*-statistics in parentheses are based on standard errors clustered by trading date. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. Panel B presents summary statistics for our cross-sectional variables. Panel C presents Pearson correlations of our cross-sectional variables, with *p*-values in italics. All variables are defined in Appendix A.

*Panel A: Dependent variable*

|  | All firms with available return data (1) | Firms in cross-sectional sample (2) |
|---|---|---|
| MKT_RET | 1.3000*** | 1.3792*** |
|  | (32.44) | (31.67) |
| OIL_RET | 0.4248*** | 0.4496*** |
|  | (17.44) | (16.95) |
| **EVENT** | **-0.0039**** | **-0.0039**** |
|  | **(-2.50)** | **(-2.47)** |
| CONST | -0.0003 | -0.0004 |
|  | (-1.14) | (-1.37) |
| N | 132,105 | 94,269 |
| Adjusted $R^2$ | 0.2051 | 0.2922 |
| # Clusters (Dates) | 1,407 | 1,407 |
| # Firms | 94 | 67 |

*Panel B: Descriptive statistics (cross-section)*

| | N | mean | sd | p25 | p50 | p75 |
|---|---|---|---|---|---|---|
| ABN_RET (in %) | 67 | -0.39 | 0.47 | -0.66 | -0.39 | -0.09 |
| REPRISK | 67 | 0.45 | 0.50 | 0.00 | 0.00 | 1.00 |
| RRI | 67 | 0.35 | 0.14 | 0.25 | 0.32 | 0.42 |
| SIZE | 67 | 8.05 | 1.84 | 6.73 | 8.18 | 9.32 |
| ANALYSTS | 67 | 2.68 | 0.68 | 2.25 | 2.89 | 3.25 |
| FOREIGN | 67 | 0.48 | 0.50 | 0.00 | 0.00 | 1.00 |
| CBOARD | 67 | 0.42 | 0.46 | 0.00 | 0.00 | 1.00 |
| INST_OWN | 67 | 0.77 | 0.24 | 0.64 | 0.84 | 0.95 |
| DEV_RES | 53 | 0.56 | 0.13 | 0.50 | 0.58 | 0.64 |
| SALES_GR | 66 | 0.23 | 0.29 | 0.05 | 0.16 | 0.28 |
| STD_CF | 67 | 0.06 | 0.05 | 0.03 | 0.06 | 0.08 |
| ETR | 67 | 0.32 | 0.22 | 0.17 | 0.36 | 0.40 |
| OFFSHORE | 67 | 0.71 | 0.40 | 0.33 | 1.00 | 1.00 |
| COMPETITION | 44 | 0.11 | 0.13 | 0.04 | 0.07 | 0.16 |

*Panel C: Correlations (cross-section)*

| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) | ABN_RET | 1.00 | | | | | | | | | | | | |
| (2) | RRI | 0.05 | 1.00 | | | | | | | | | | | |
| | | *0.69* | | | | | | | | | | | | |
| (3) | SIZE | 0.28 | 0.60 | 1.00 | | | | | | | | | | |
| | | *0.02* | *0.00* | | | | | | | | | | | |
| (4) | ANALYSTS | -0.05 | 0.44 | 0.74 | 1.00 | | | | | | | | | |
| | | *0.66* | *0.00* | *0.00* | | | | | | | | | | |
| (5) | FOREIGN | 0.36 | 0.34 | 0.35 | 0.11 | 1.00 | | | | | | | | |
| | | *0.00* | *0.01* | *0.00* | *0.35* | | | | | | | | | |
| (6) | CBOARD | -0.09 | -0.23 | -0.33 | -0.20 | -0.19 | 1.00 | | | | | | | |
| | | *0.49* | *0.06* | *0.01* | *0.10* | *0.11* | | | | | | | | |
| (7) | INST_OWN | -0.22 | 0.09 | 0.30 | 0.59 | 0.01 | -0.17 | 1.00 | | | | | | |
| | | *0.08* | *0.45* | *0.02* | *0.00* | *0.92* | *0.17* | | | | | | | |
| (8) | DEV_RES | 0.31 | 0.02 | 0.11 | -0.04 | 0.03 | 0.05 | -0.25 | 1.00 | | | | | |
| | | *0.02* | *0.87* | *0.44* | *0.75* | *0.84* | *0.75* | *0.07* | | | | | | |
| (9) | SALES_GR | -0.25 | -0.33 | -0.23 | -0.26 | -0.25 | -0.02 | -0.16 | -0.27 | 1.00 | | | | |
| | | *0.04* | *0.01* | *0.06* | *0.04* | *0.04* | *0.88* | *0.20* | *0.05* | | | | | |
| (10) | STD_CF | -0.03 | -0.36 | -0.68 | -0.52 | -0.21 | 0.21 | -0.46 | 0.12 | 0.06 | 1.00 | | | |
| | | *0.79* | *0.00* | *0.00* | *0.00* | *0.09* | *0.09* | *0.00* | *0.37* | *0.65* | | | | |
| (11) | ETR | 0.00 | 0.17 | 0.21 | 0.00 | 0.31 | -0.14 | 0.09 | 0.00 | 0.12 | -0.10 | 1.00 | | |
| | | *0.97* | *0.18* | *0.09* | *0.99* | *0.01* | *0.26* | *0.46* | *0.98* | *0.32* | *0.44* | | | |
| (12) | OFFSHORE | 0.17 | 0.30 | 0.20 | 0.13 | 0.63 | -0.27 | 0.08 | -0.01 | -0.33 | -0.10 | 0.22 | 1.00 | |
| | | *0.18* | *0.01* | *0.10* | *0.30* | *0.00* | *0.02* | *0.53* | *0.92* | *0.01* | *0.44* | *0.07* | | |
| (13) | COMPETITION | -0.19 | -0.21 | -0.52 | -0.47 | 0.05 | 0.28 | -0.08 | -0.24 | 0.10 | 0.35 | -0.06 | -0.01 | 1.00 |
| | | *0.21* | *0.17* | *0.00* | *0.00* | *0.74* | *0.07* | *0.58* | *0.18* | *0.53* | *0.02* | *0.70* | *0.95* | |

**Table 4: Firm Value Effects of the EPD Rule and Firms' Reputational Risk (Main Test of H)**

*Note*: This table presents estimates of the cross-sectional determinants of firms' abnormal returns (equation (1)). Column (1) presents the estimation of the main specification, where REPRISK, a dummy variable that is 1 if the firm fails to achieve a high reputational risk rating (AA or better), and 0 otherwise, is the main independent variable of interest. Column (2) presents results using the continuous RepRisk Index (*RRI*) as the main independent variable. Column (3) presents results estimated for a subsample of firms with oil and gas properties exclusively located in the U.S. Following the procedure proposed by Sefcik and Thompson (1986), *t*-statistics in parentheses are based on standard errors which account for cross-sectional correlation and are robust to heteroscedasticity. This method constructs separate portfolios for each cross-sectional determinant and the constant, and then derives the standard errors from a time-series estimation of these portfolios. Therefore, the number of observations equals the number of trading dates. Similarly, the $R^2$ values relate to the separate portfolio regressions performed for each individual determinant. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. All variables are defined in Appendix A.

| | Exp. Sign | Main Model (1) Coeff. (*t*-stat) | $R^2$ | RRI as Main IV (2) Coeff. (*t*-stat) | $R^2$ | U.S. Properties Only (3) Coeff. (*t*-stat) | $R^2$ |
|---|---|---|---|---|---|---|---|
| **REPRISK** | **-** | **-0.0027\*\*** (**-2.39**) | **0.02** | | | **-0.0029\*** (**-1.76**) | **0.03** |
| **RRI** | **-** | | | **-0.0087\*\*** (**-2.04**) | **0.02** | | |
| SIZE | +/- | 0.0016** (2.52) | 0.21 | 0.0016** (2.50) | 0.20 | 0.0029** (2.40) | 0.23 |
| ANALYSTS | +/- | -0.0026 (-1.46) | 0.01 | -0.0023 (-1.29) | 0.01 | -0.0080*** (-2.89) | 0.09 |
| FOREIGN | - | 0.0027 (1.54) | 0.06 | 0.0025 (1.48) | 0.07 | | |
| CBOARD | + | 0.0004 (0.30) | 0.01 | 0.0002 (0.15) | 0.01 | -0.0002 (-0.15) | 0.02 |
| INST_OWN | +/- | -0.0028 (-0.79) | 0.05 | -0.0035 (-0.98) | 0.06 | 0.0022 (0.55) | 0.00 |
| CONST | ? | -0.0078 (-1.36) | 0.40 | -0.0064 (-1.13) | 0.39 | -0.0074 (-0.95) | 0.40 |
| N | | 1,407 | | 1,407 | | 1,407 | |
| # of Firms | | 67 | | 67 | | 35 | |

**Table 5: Reputational Risk vs Proprietary Costs – Firm Value Effects of the MOGR Rule**

*Note:* This table presents estimates of the cross-sectional determinants of abnormal returns to regulatory events relating to the MOGR rule. Column (1) replicates our main result for the EPD rule using the sample of 57 firms for which we have return data during the MOGR-related events. Therefore, the dependent variable in Column (1) is firms' abnormal returns during the EPD-related event windows as identified in Table 1 and the number of observations is the number of trading days in our main sample period (June 2010 – December 2015). In column (2), the dependent variable is firms' abnormal returns during MOGR-related event windows as described in Appendix F. The number of observations is the number of trading dates between June 2007 and January 2009. In Column (3), the dependent variable is firms' abnormal returns during the event windows surrounding the proposal of the MOGR-rule (event #2 as described in Appendix F). The number of observations is the number of trading dates between June 2007 and January 2009, less the six days of the event windows surrounding event #1 and event #3. Following the procedure proposed by Sefcik and Thompson (1986), *t*-statistics in parentheses are based on standard errors which account for cross-sectional correlation and are robust to heteroscedasticity. The $R^2$ values relate to the separate portfolio regressions performed for each individual determinant. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% level, respectively. All variables are defined in Appendix A.

| | Exp. Sign | EPD Events (1) Coeff. (*t*-stat) | $R^2$ | MOGR Events (2) Coeff. (*t*-stat) | $R^2$ | MOGR Proposal Events (3) Coeff. (*t*-stat) | $R^2$ |
|---|---|---|---|---|---|---|---|
| **REPRISK** | **-** | **-0.0028\*\*** **(-2.39)** | **0.01** | **0.0002** **(0.08)** | **0.01** | **0.0001** **(0.02)** | **0.01** |
| SIZE | +/- | 0.0017\*\*\* (2.60) | 0.20 | -0.0024\* (-1.94) | 0.07 | -0.0028 (-1.32) | 0.06 |
| ANALYSTS | +/- | -0.0033\* (-1.70) | 0.02 | 0.0002 (0.09) | 0.04 | 0.0026 (0.68) | 0.04 |
| FOREIGN | - | 0.0027 (1.49) | 0.05 | 0.0025 (0.67) | 0.02 | 0.0050 (0.80) | 0.02 |
| CBOARD | + | -0.0002 (-0.15) | 0.01 | -0.0018 (-0.62) | 0.05 | 0.0002 (0.03) | 0.06 |
| INST_OWN | +/- | -0.0028 (-0.74) | 0.03 | -0.0129 (-1.30) | 0.11 | -0.0086 (-0.51) | 0.12 |
| CONST | ? | -0.0065 (-1.05) | 0.35 | 0.0264\*\* (2.16) | 0.40 | 0.0250 (1.21) | 0.37 |
| | | | | | | | |
| N | | 1,407 | | 401 | | 395 | |
| # of Firms | | 57 | | 57 | | 57 | |