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

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Abstract: We study the firm value effects of targeted disclosure regulation – disclosure requirements that target policy objectives outside of securities regulators' traditional missions. Specifically, we are interested in an emerging type of targeted disclosure regulation that is aimed at empowering civil society to discourage firms' illicit actions. Our setting is the SEC's extraction payments disclosure rule, which requires oil and gas firms to publish details about their payments to host governments. The SEC's rule aims to combat corruption underlying the 'resource curse' in the oil and gas sector. Our interview-based and archival evidence indicates that these disclosures can impose reputational costs on firms by facilitating pressure groups' campaigns. Event-study results document that the rule's negative effect on firm value is stronger where firms face greater reputational risk, which makes them more vulnerable to pressure groups' campaigning. These findings are robust to several alternative explanations and research design choices.

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

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We study the firm value effects of targeted disclosure regulation – disclosure requirements that target policy objectives outside of securities regulators' traditional missions. Specifically, we are interested in an emerging type of targeted disclosure regulation that is aimed at empowering civil society to discourage firms' illicit actions. Our setting is the SEC's extraction payments disclosure rule, which requires oil and gas firms to publish details about their payments to host governments. The SEC's rule aims to combat corruption underlying the 'resource curse' in the oil and gas sector. Our interview-based and archival evidence indicates that these disclosures can impose reputational costs on firms by facilitating pressure groups' campaigns. Event-study results document that the rule's negative effect on firm value is stronger where firms face greater reputational risk, which makes them more vulnerable to pressure groups' campaigning. These findings are robust to several alternative explanations and research design choices.

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1. Introduction

Regulators increasingly use disclosure requirements to promote policy objectives such as consumer safety, environmental protection, or supply chain sustainability. This approach of 'targeted transparency' (Fung et al. 2007) aims to nudge firms towards socially desirable actions by exposing them to increased public pressure. In the 2010 Dodd-Frank Act, the U.S. Congress embedded this approach into securities regulation. Section 1504 mandates the SEC to issue an extractive payments disclosure (EPD) rule that requires oil and gas firms to publicly provide new, granular disclosures about payments they make to the governments of the countries they operate in. This paper studies the firm value effects of the EPD rule.

We currently know relatively little about the firm-level costs and benefits of targeted disclosure rules within securities regulation, as their intended "social benefits [differ] from the investor protection benefits that [the SEC's] rules typically strive to achieve" (SEC 2012, p. 56397). In an early study, Healy and Serafeim (2017) document a negative average market reaction to events leading up to the EPD rule's adoption by the SEC. Cross-sectional variation in these event returns is consistent with investors expecting political and proprietary costs due to firms' foreign exposure. Given the EPD rule's stated objective of empowering civil society to hold oil and gas firms accountable, it provides a unique opportunity to shed light on a specific channel through which targeted disclosure regulation operates, namely by empowering

pressure groups[1] to impose reputational costs on disclosing firms. Our study provides quantitative and qualitative evidence on this particular mechanism to advance our understanding of the costs and benefits of targeted transparency, an emerging regulatory phenomenon.

To this end, we explore how the firm value effects of targeted disclosure regulation differ across firms, inferring firms' costs and benefits of the EPD rule (as expected by investors) from stock returns around regulatory announcements relating to the SEC's implementation of the rule. Consistent with its stated objective of empowering civil society to hold oil and gas firms accountable, the EPD rule generated considerable support from a diverse set of pressure groups. These groups use disclosures to support their campaigns aimed at influencing firms' actions by mobilizing public pressure and thus imposing reputational costs. Hence, we are specifically interested in whether the costs of targeted disclosure regulation vary with firms' *reputational risk* – i.e., their vulnerability to reputational costs arising from public pressure and stakeholder scrutiny as a result of the new disclosure requirements.[2] Combining archival event-study tests with field evidence from interviews and comment letters, we respond to the call in Healy and Serafeim (2017) for "industry-specific research that combines archival and field data to draw inferences".

Pressure groups are important players in the public policy debate. During the rulemaking process, several groups (including EarthRights International, Oxfam, and Publish What You Pay) supported the EPD rule in numerous comment letters. Given the lack of research on pressure groups as constituents of securities regulation and users of financial disclosures, we conducted interviews to gain insights into how EPDs would enhance their campaigning, and thereby translate into costs for firms. Our interviews reveal that pressure groups active in the oil and gas sector would indeed find mandatory EPDs useful for their campaigns due to distinct properties of these disclosures (e.g., reliability, granularity, timeliness, and low-cost access). Such campaigning can increase firms' business costs, e.g., because it interferes with their

[1] We use the term "pressure group" to capture NGOs and other activist groups advocating environmental, anti-corruption, sustainability, human-rights and similar societal objectives.

[2] Whereas the economics literature typically uses the term 'risk' to reflect a symmetric, two-tailed variance notion, in this paper we focus on reputational *downside* risk.

operations (e.g., causing project delays due to work strikes (Franks et al. 2014)) or pressures them to increase their payments to governments and to shift into less profitable investments (Rauter 2017). Therefore, we expect more negative firm value effects of the EPD rule where firms are more sensitive to such campaigning due to greater reputational risk.

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 is based on negative stakeholder sentiment measured across a comprehensive set of sources (including news outlets and communication with pressure groups). Notably, RepRisk constructs this measure with the aim of capturing firms' exposure to reputational risk – precisely our concept of interest – rather than their absolute reputation levels. Similar to the Dyck et al. (2008) model of the media imposing reputational costs on firms, we expect firms with greater reputational risk (as indicated by low RepRisk ratings) to experience larger reductions in firm value due to their greater vulnerability to public pressure, in particular from pressure groups' campaigns.

We test our prediction using price reactions of US oil and gas stocks during three-day windows surrounding twelve regulatory events relating to the implementation of the EPD rule between 2010 and 2015. We find that investors expect larger costs of mandatory EPD for firms exposed to greater reputational risk, consistent with the stakeholder empowerment objective of the regulation and a resulting expected internalization of negative externalities. Specifically, we find that firms' abnormal returns surrounding the regulatory events are negatively associated with their exposure to reputational risk. In further tests, we do not find support for important alternative explanations for this relation. In particular, our main finding does not seem to be confounded by firms' exposure to competition with unregulated foreign competitors or to expropriation and litigation risk in host countries prohibiting EPD.

In a placebo-type analysis, we consider another disclosure regulation targeted at oil and gas firms, the SEC's Modernization of Oil and Gas Reporting (MOGR) rule. Importantly, the MOGR rule was motivated by the SEC's traditional mission to facilitate stock price formation, rather than the empowerment of non-investor stakeholders. Hence, it attracted little attention from pressure groups, but was opposed by the oil and gas industry to due concerns about proprietary costs. We do *not* find a statistically significant

association between firms' reputational risk and their abnormal returns during MOGR-related event windows. This result is important for two reasons: First, it mitigates concerns that low RepRisk ratings could primarily capture *other* disclosure costs and benefits, in particular proprietary costs. In such a case, we would expect to observe a significant relation between our reputational risk proxy and abnormal returns for MOGR-related events. Second, our MOGR result highlights a key difference between (i) disclosure regulation primarily motivated by investor protection, such as the MOGR rule, and (ii) targeted disclosure regulation, such as the EPD rule, for which firms' reputational risks are of greater importance.

Our study complements recent research examining the costs and benefits of detailed EPDs. We provide new evidence by focusing on cross-sectional variation resulting from the empowerment of pressure groups, which links directly to the policy objective of mandatory EPD requirements. This allows us to contribute to a recent stream of literature interested in the effects of targeted disclosure regulation that goes beyond capital market regulators' core mandates (Christensen et al. 2017, Dyreng et al. 2016, Grewal et al. 2017, Rauter 2017). These studies document effects on specific outcomes, such as firm value (Grewal et al. 2017), employee safety in mines (Christensen et al. 2017), tax avoidance (Dyreng et al. 2016), as well as extraction payments and investments (Rauter 2017), arising through different mechanisms. We complement these studies by focusing on firm value as a summary outcome that reflects the balance of different costs and benefits of targeted disclosure regulation. For example, the negative association between firm value and reputational risk can be due to (a combination of) greater payments to governments, costly reallocations of investments, and/or customer backlash. Taken all these channels together, our results indicate that firms with greater reputational risk experience larger firm value reductions, consistent with the EPD rule having more "bite" for these firms.

Section 2 provides background on targeted disclosure regulation in general and the EPD rule in particular, including evidence from interviews and pressure groups' public statements. In section 3, we present related literature and develop our hypothesis. Our research design is described in section 4. Section 5 contains a description of our regulatory events and sample firms. We present our main event study results in section 6, along with several robustness tests. Section 7 concludes.

2. Targeted Disclosure Regulation: The SEC's Extraction Payments Rule

2.1 Institutional background

Fung et al. (2007) provides a useful framework for understanding targeted disclosure regulation that is aimed at discouraging firms from engaging in illicit activities. Assuming firms comply, and users access and process the disclosures, increased transparency about firms' targeted activities will trigger shifts in users' behavior towards the firm. In turn, firms will adjust the targeted activities, or absorb the costs associated with continuing them.[3] These changes affect the amount, timing, and uncertainty of firms' future cash flows, and hence firm value. Anticipating this, investors bid down stock prices as the targeted disclosure regulation becomes more likely. We argue below that the SEC's EPD rule represents disclosure regulation targeted at empowering pressure groups to deter oil and gas extraction firms from illicit conduct.

The EPD rule is rooted in capital-market regulation, with the SEC the regulator in charge. Specifically, 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 "that 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."

At their core, oil and gas firms' extraction payments represent cash outflows from operations and investing; hence, the EPD rule mandates financial disclosures. Importantly, whereas the new Section 1504 made certain that the rule would ultimately come, the SEC had considerable discretion regarding its details. It could (1) limit its scope 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,

[3] To illustrate, in the seminal study by Jin and Leslie (2003), the regulation of interest mandates public disclosure of restaurants' hygiene grade cards. Displaying these grade cards in restaurant windows provides (potential) customers a low-cost way of obtaining transparency about a key aspect of restaurants' operating activities: cleanliness, an important element of product quality. Low-hygiene restaurants experience declines in demand from customers, and their hygiene grades subsequently improve. Decreasing incidence of foodborne illness suggests that the hygiene-grade increases are due to restaurants improving cleanliness – the key targeted activity.

non-public filing.[4] This discretion created *ex-ante* uncertainty concerning key features of the SEC's rule, and hence the disclosures' usefulness to pressure groups. *Ex post*, the SEC adopted a strict interpretation, with only limited exemptions, and required highly granular extractive payments disclosures.

Aiming to address the 'resource curse', the rule's policy objective goes beyond the SEC's core mandate, making the rule an example of targeted disclosure regulation. In terms of the targeted activities, the SEC clarified that "the legislation reflects U.S. foreign policy interests in supporting global efforts to improve transparency in the extractive industries. The goal of such transparency is 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, p. 49361). Commenting on the users 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.

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 disclosure of payments to governments. 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 spread out across several country platforms (as under EITI recommendations), facilitates access and reduces search costs for interested parties. These features render the SEC's EPD rule highly useful for pressure groups' campaigning against oil and gas firms and their extractive activities.

[4] Electronic Companion I summarizes the key features of the EPD rule and presents details on the SEC's exercise of discretion during the rulemaking process.

2.2 Qualitative evidence from pressure groups

The EPD rule differs from other disclosures regulation because it is explicitly geared towards empowering stakeholders, including civil society and the pressure groups representing it, to hold oil and gas firms accountable for their resource extraction activities. Yet, little is known about whether and how pressure groups use mandatory capital markets disclosures for their aims. In this section, we present initial evidence from (1) ten semi-structured interviews with representatives of pressure groups campaigning in the oil and gas extraction sector (see Table B1 in Appendix B), and (2) pressure groups' as well as oil and gas extraction firms' comment letters during the rulemaking process (see Table B2 in Appendix B). In summary, this evidence indicates that pressure groups actively follow EPD rulemaking and, due to the distinct information properties of these disclosures, regard them a useful and easy-to-access source of information that would be helpful in deterring perceived illegitimate conduct by oil and gas extraction firms.[5]

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 B2 in Appendix B). Several interviewees related that they would acquire the new disclosures, once 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 B1 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 rely on the information in their campaigns without running the risk of making erroneous statements or accusations. 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

[5] Rauter (2017) relates the anecdote that the Natural Resource Governance Institute (NRGI), an advocacy group, used EPD-like disclosures mandated in the EU to unveil Weatherly International's failure to make royalty payments for extraction projects in Namibia, and to pressure the UK firm into making additional payments.

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.[6] As a result, pressure groups believe that a deterrence effect would emanate from the EPD requirements (see Panel B of Table B1 for selected interview quotes and Table B2 for selected comment letter quotes).

3. Related Literature and Hypothesis Development

3.1 Related literature

Our study relates to two streams of literature. First, prior studies have provided analytical predictions (Lambert et al. 2007) and empirical evidence (e.g., Khan et al. 2018) for the net effect of disclosure regulation on firm value. This net effect is not in the focus of our paper. Rather, we are interested in a specific source of potential variation in this net effect, namely that originating from across-firm differences in reputational risk. Our interest is motivated by the rationale of targeted disclosure regulation, and the EPD rule in particular, that disclosure can mobilize public scrutiny and pressure that imposes costs on firms engaged in actions perceived as illegitimate. By contrast, prior studies have focused on accounting standards (e.g., Armstrong et al. 2010, Bowen and Khan 2014, Chircop and Novotny-Farkas 2016, Collins et al.

[6] 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 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).

1981, Espahbodi et al. 2002, Joos and Leung 2012) and disclosure regulations (e.g., Fernandes et al. 2010, Greenstone et al. 2006, Lo 2003, Zhang 2007) that are primarily geared towards investor protection and the facilitation of price efficiency. While these studies have importantly contributed to our understanding of investors' perceived costs (e.g., compliance or proprietary costs) and benefits (e.g., reduced information risk) of such regulation, evidence on the reputational costs of disclosure regulation is scarce. By exploring the relation between the firm value effects of the EPD rule and firms' reputational risk, we fill this gap and shed light on an important factor of interest to policy makers deploying targeted disclosure regulation.

In a related study, Grewal et al. (2017) link stock market effects of an ESG disclosure mandate to affected firms' previous ESG performance and disclosure levels, elucidating investors' perceptions related to the costs of mandatory non-financial disclosure. Our study adds to Grewal et al. (2017) in three ways: (a) The non-financial disclosure mandate studied in Grewal et al. (2017) primarily addresses investors' information demand, and points to potential wealth transfers away from equity holders. Our analysis of financial disclosure regulation targeted explicitly at non-investor stakeholders builds on Grewal et al. (2017) by speaking to a specific channel through which disclosure regulation can promote such wealth transfers via the internalization of negative externalities. This channel – pressure groups' campaigns imposing reputational costs on firms – is consistent with the regulator's objective of empowering civil society to nudge firms towards socially desirable conduct. (b) Our in-depth analysis of qualitative interview and comment-letter evidence deepens our understanding of the forces that translate disclosure requirements into costs for firms. (c) Our focus on a single industry (oil and gas extraction) and specific disclosure (payments to governments) extends Grewal et al. (2017) by facilitating attribution of observed effects to the specific channel of interest: pressure groups' imposing reputational costs.

Second, our work relates to studies on the relation between mandatory disclosure, reputational costs, and firm value. Prior work finds that reputational costs affect corporate decision-making (Baloria and Heese 2018, Christensen et al. 2017, Mills et al. 2012), and that reputational capital can shield firms from adverse firm value effects during crises (Lins et al. 2017) or in the event of corporate misconduct (Christensen 2016). Finally, prior research documents that firms' exposure to public scrutiny matters for the firm

value effects of its behavior towards stakeholders. Servaes and Tamayo (2013) find that customer awareness and alignment with general corporate reputation are conditions for CSR to enhance firm value. Similarly, Kölbel et al. (2017) document that the extent to which corporate misconduct materializes in financial risk depends on the severity of media coverage scrutinizing an incident. We complement these studies by exploring the role of mandatory disclosure (Dyreng et al. 2016, Rauter 2017). Our findings suggest that public disclosure aiming to reinforce the consideration of social norms in corporate decision-making (Hasan et al. 2017a, Hasan et al. 2017b, Hong and Kacperczyk 2009, for a review: Servaes and Tamayo 2017) will matter more when firms are exposed to greater reputational risk.

3.2 Empirical prediction

Figure 1 summarizes our empirical prediction. It posits that (1) the new targeted EPD rule affects firm value by empowering pressure groups to impose reputational costs on firms through more effective campaigning, and (2) firms with greater reputational risk (i.e., vulnerability to pressure groups' campaigns) suffer greater disclosure-induced reputational costs. This mechanism is closely related to the study of Dyck et al. (2008) on how the media can impose reputational costs on firms. Specifically, Dyck et al. (2008) argue that the media can cause reputational costs by (1) making the public aware of firms' (perceived) illegitimate actions and (2) slanting news about these actions in a way that negatively impacts firms' reputational capital with its stakeholders (e.g., customers, employees) and, thus, makes transactions with these stakeholders more costly. We expect that the EPD rule affects firms' reputational costs through a similar mechanism, namely due to the (expected) use of the disclosures by pressure groups in their campaigns against oil and gas firms' illegitimate actions. In these campaigns, pressure groups join forces with the media: Whereas the former extract in-depth insights from mandatory EPD and launch campaigns against wrongdoers, the latter provide broad dissemination and (potentially) slant. Specifically, we argue that reputational costs arise through two links: (1) mandatory EPD facilitating pressure groups' campaigning, and (2) intensified campaigning by pressure groups (and the media) imposing higher reputational costs on firms.

To explore the first link – mandatory EPD facilitating pressure groups' campaigning – we conducted interviews with representatives of a broad range of pressure groups. Our interviews support the

notion that specific properties render mandatory EPD useful information that facilitates pressure groups' campaigning and pressuring firms into changing their behavior (see section 2.2). This insight is consistent with the SEC's intent, and is further supported by pressure groups' active participation in the SEC rule-making process. These groups incurred the costs of submitting numerous comprehensive comment letters to the SEC (summarized in Appendix B) in which they expressed their demand and support for mandatory EPD. Taken together, our interview evidence, pressure groups' revealed efforts to participate in the rule-making process, as well as the content of their comment letters strongly support our assumption that these groups would leverage mandatory EPD to intensify the public scrutiny of oil and gas extraction firms.

The second link presumes that increased campaigning by pressure groups due to mandatory EPD imposes business costs on oil and gas firms. We refer to these business costs as 'reputational costs'. They can arise from a diverse set of firms' interactions with several stakeholder groups. For example, Franks et al. (2014) provide case-based evidence that pressure groups' activism can be costly to firms because it inhibits business operations due to project delays (e.g., as a result of work strikes or physical protests) and/or ties up staff resources. Costs can also arise from firms taking corrective action in response to, or to avoid, public scrutiny. In this vein, prior studies find that firms being exposed to more intense public scrutiny avoid less taxes (Dyreng et al. 2016), increase donations (Gan 2006), invest more in employee safety (Christensen et al. 2017), or – in a setting similar to ours – increase their payments to governments (Rauter 2017).[7] Since these measures redistribute wealth from shareholders to other stakeholders (e.g., the government or employees), they can reduce firm value.[8]

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[7] As an illustrative example for a costly corrective measure, consider Greenpeace's initiative aimed at deterring Shell UK from disposing of its defunct Brent Spar oil storage and tanker loading buoy in deep Atlantic waters off the west coast of Scotland. It became clear that these campaigns can result in target firms abandoning the criticized plans, and replacing them with actions that are net costlier, at least in the short run. In the Brent Spar example, the plan of towing the facility to North Feni Ridge and submerging it there (estimated to cost between £17m and £20m) was ultimately replaced by Shell's pursuing of only on-shore disposal options (initially estimated to cost £41m). Both cost estimates are from https://en.wikipedia.org/wiki/Brent_Spar.

[8] We do not assume that these corrective actions do not have *any* benefits (such as, improving the relation of the firm with its stakeholders). Rather, we assume that the firm will choose a corrective action that maximizes firm value, conditional on the intensity of campaigning by pressure groups and pertaining level of public scrutiny. With higher levels of public scrutiny due to mandatory EPD, in equilibrium, the firm will choose corrective actions that have higher *net* costs.

Overall, our central assumption that mandatory EPD, *on average*, increases oil and gas firms' reputational costs through intensified public scrutiny appears supported by prior studies. We extend the literature by analyzing whether the strength of this effect, and the resulting firm value repercussions, vary with firms' reputational risk. Similar to the mechanism in Dyck et al. (2008), this moderating role of reputational risk can arise from two (non-mutually exclusive) effects. First, higher reputational risk makes firms likely to suffer larger business costs from a given increase in public scrutiny, as firms with higher (lower) reputational risk suffer higher (lower) reputational costs when campaigned against. Put differently, reputation or social capital can make firms resilient to the firm value effects of negative events (Christensen 2016, Lins et al. 2017). Second, pressure groups consider firms' reputational risk in their strategic resource allocation decisions (e.g., Baron and Diermeier 2007). As confirmed in our interviews, pressure groups apply basic economic logic in selecting campaign targets, strategically prioritizing more vulnerable firms, as they expect the greatest impact on these firms' behavior.[9] Accordingly, firms with greater reputational risk should experience a larger increase in public scrutiny due to mandatory EPD disclosures. Taken together, we predict that firms with greater reputational risk will incur larger reputational costs – and thus more negative firm value effects – due to pressure groups' use of mandatory EPD in their campaigns:

H: The firm value effects of the EPD rule are negatively associated with firms' reputational risk.

The arguments above notwithstanding, it is also plausible that there is no relation between the firm value effects of the EPD rule and firms' reputational risk. In particular, investors might expect that the required disclosures would be of little use to pressure groups (contradicting the interview and comment letter evidence provided in section 2.2), or that intensified campaigning would fail to have firm value repercussions for affected firms. Hence, whether the firm value effects of the EPD rule vary with firms' reputational risk is an empirical question that we address below.

[9] As Baron and Diermeier (2007, p. 611) put it: "An activist prefers causes … where it would make a difference."

4. Research Design

4.1 Dependent variable

To measure the firm value effects of the EPD rule, we apply the event study method. If investors update their beliefs about net disclosure costs and, ultimately, firm value in response to rulemaking events, we expect statistically significant abnormal returns for events affecting the likelihood of strict implementation. To measure firms' abnormal returns, we use a multivariate regression model in the spirit of Schipper and Thompson (1983), which assumes a certain return-generating process conditioned on the occurrence or non-occurrence of an event, as expressed in equation (1):

$$R_{it} = \alpha_i + \beta_i MKT_t + \varphi_i OIL_t + \gamma_i EVENT_t + \varepsilon_{it} \tag{1}$$

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 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. 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).

β_i and φ_i reflect the firm-specific co-movement of stock returns with market portfolio returns and oil price changes, respectively, on non-event days. The intercept, α_i, represents firm *i*'s expected average abnormal stock return on non-event days (i.e., after partialing out common movements with market returns and oil prices). Our measure of the firm value effect of the EPD rule and the dependent variable of our cross-sectional tests is γ_i, the shift in firm *i*'s abnormal return on an average day during our twelve event windows. A negative (positive) value for γ_i reflects a negative (positive) firm value effect of a strictly implemented EPD rule, as perceived by investors.

4.2 Cross-sectional analyses

We predict that investors perceive the EPD rule to be relatively more costly for firms exposed to greater reputational risk. To test our prediction, we estimate the following cross-sectional model of firms' abnormal returns as a function of their reputational risk and other firm-level determinants:

$$\gamma_i = \delta_1 + \delta_2 REPRISK_i + \delta' X + \varepsilon_i \tag{2}$$

where γ_i is firm i's average, daily abnormal return over all event windows, $REPRISK_i$ is firm i's reputational risk, and X is a vector of firm-specific control variables (see Appendix A for variable definitions and data sources). All cross-sectional variables are averaged over the sample period.

To measure the cross-sectional variable of interest, *REPRISK*, we use rating data from RepRisk, a leading research and business intelligence provider (see Appendix C for a detailed description of these data). 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. Given the overall distribution of ratings across sample firms (Figure C1 of Appendix C), this roughly corresponds to a median split.

The control vector, X, includes 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. First, we control for *SIZE*, the logarithm of market value of equity. We do not make a prediction on the sign of the coefficient on *SIZE* as larger firms could have both lower informational benefits (negative sign) and lower compliance and proprietary costs (positive sign). Second, we include *ANALYSTS*, the logarithm of the number of analysts following the firm, to capture differences in investors' processing of the information about regulatory events. We refrain from making a signed prediction for *ANALYSTS*. Third, we include a dummy variable, *CBOARD*, indicating whether the firm has a staggered, or classified, board.

By shielding managers from removal, staggered boards can foster agency conflicts, e.g., by encouraging empire building (Bebchuk et al. 2009, Bebchuk and Cohen 2005). Since granular disclosures can help mitigate such agency problems, we expect a positive sign on *CBOARD*. Fourth, we include a dummy variable, *FOREIGN*, indicating whether the firm has oil and gas properties abroad. As firms with operations abroad likely face higher risks of expropriation and losing business in corrupt countries following the disclosure of payments to governments, we expect a negative sign for the coefficient on *FOREIGN*. Finally, we control for *INST_OWN*, the percentage of institutional ownership. We expect a negative sign due to institutional investors' enhanced information processing.[10]

To control for cross-sectional correlation due to the single-industry setting and the identical event dates for all sample firms, we follow the approach proposed in Sefcik and Thompson (1986) as applied in similar prior settings (Chircop and Novotny-Farkas 2016, Espahbodi et al. 2002, Frischmann et al. 2008).

5. Events and Sample Selection

5.1 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.[11] 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.

[10] Section 6.3.3 reports robustness tests using additional control variables.

[11] We present and discuss various robustness tests relating to event selection and potential confounding events in section 6.3.2., with additional detail provided in Electronic Companions II (on the legislative process), III (on potential confounding events), and VI (additional empirical tests).

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 that we do not expect much uncertainty to be resolved by this event.[12] 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 section 6.3.2.

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.[13]

To account for potential confounding events, we follow Larcker et al. (2011) and review the 'Business and Finance' section of the Wall Street Journal. Electronic Companion III summarizes excerpts that indicate potential confounding events relating to the extractive industry or the overall economy. 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. 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. In conclusion, we do not exclude any event due to confounding news.

5.2 Sample selection

As shown in Table 2, sample selection 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 also affects mining

[12] 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.

[13] Inferences remain unchanged when we exclude events that also relate to the conflict minerals rule (section 6.3.2).

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). We drop firms that have a business model outside the scope of the rule (e.g., transportation and marketing services) and/or because they 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 (required for application of the Sefcik and Thompson (1986) procedure). These requirements yield 67 firms to test our main hypothesis (Panel B of Table 2).

6. Empirical Results

6.1 Firm value effects of the EPD rule and firms' reputational risk

We first document that investors, on average, expected a negative effect of the EPD rule on firm value. Table 3 presents estimates of equation (1) pooled across our sample firms. Whereas the column (1) results use the broader sample for average market reactions, column (2) focuses on the sample used in the cross-sectional analyses testing **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.[14]

[14] These results are broadly consistent with the average market reactions documented in Healy and Serafeim (2017), albeit based on slightly different events. Results using the Healy and Serafeim (2017) events are discussed in section 6.3.2. We present and discuss results for the separate events in Electronic Companion IV.

While this finding indicates that investors perceive net costs from the EPD rule *on average*, our empirical prediction is concerned with 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-section control variables. 45% of firms are subject to 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, consistent with further descriptive evidence provided in Electronic Companion V. 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 hypothesis tests. Column (1) is the main specification. Supporting **H**, firms' reputational risk is significantly negatively associated (at the 5% level) with their abnormal returns. This is consistent with the EPD rule having more detrimental effects for 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 than firms with low reputational risk (*REPRISK* = 0).[15]

Inferences are the same when we use *RRI*, the continuous RepRisk Index, as an alternative measure of firms' reputational risk (Appendix C provides details on the two RepRisk metrics). 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.[16]

[15] 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.

[16] We assess the implications of the sample selection requirement of RepRisk ratings in Electronic Companion V.

6.2 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**.

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 under the EPD rule, exposing firms that operate in such jurisdictions to legal risks.[17] (b) The large investments that oil and gas exploration activities require expose firms to the risk of expropriation by host governments (Healy and Serafeim 2017). 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'

[17] We note that the existence and magnitude of such risks were heavily debated by firms and advocay 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)

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 (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.

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 institutional detail, refer to Appendix D and Badia et al. (2018, Appendix B). In the rulemaking process, industry participants raised concerns that the newly required disclosures could cause competitive harm if used by rivals. Badia et al. (2016) 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. 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.[18]

[18] 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).

6.3 Robustness tests

6.3.1 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 (Electronic Companion III), (2) use variation in terms of events decreasing versus increasing 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 features a 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. 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 (2) using twelve randomly selected placebo event dates. Figure 2 shows the distributions of the coefficients obtained using these placebo tests and, as vertical lines, the coefficients on the cross-sectional determinants of our main tests using the true event dates. For our variable of interest (*REPRISK*), the coefficient obtained using the true event dates lies below the 25th percentile of the distribution of the respective placebo coefficients. In 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.

6.3.2 Sensitivity to alternative event selections

We further assess whether our inferences are robust to using alternative sets of events. Results are tabulated in the in the Electronic Companion. First, we exclude four events that may also relate to conflict minerals disclosures (Panel A of Table EC-VI.1; column 3). 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 surrounding the Dodd-Frank Act as identified by Healy and Serafeim (2017) and Gao et al. (2018), respectively (Panel A of Table EC-VI.1; columns 1 and 2). 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 (Panel B of Table EC-VI.1). To that end, we repeat our estimation of the average market reaction (equation 1) and cross-sectional analyses (equation 2) 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 (refer to Electronic Companion II for details). 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[19] and concerns about comparability with international peers.[20] Accordingly, the market reactions to the repeal may capture costs and benefits other than those

[19] 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.

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

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 (e.g., Exxon's earnings announcement). We first determine the average market reaction to events surrounding the repeal of the rule by estimation equation (1) using a period ranging from January 2016 to March 2017 (Panel A of Table EC-VI.2). The coefficient on *EVENT* is not statistically different from zero. 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 of the repeal for three different sets of repeal-related events (Panel B of Table EC-VI.2).

6.3.3 Sensitivity to additional control variables

Next, we explore the sensitivity of our main results to the inclusion of additional control variables (Table EC-VI.3 in the Electronic Companion). 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. We expect firms' sales growth and standard deviation of cash flows to capture differences in firms' litigation and business risk (Kim and Skinner 2012), and their effective tax rate to capture differences in their tax planning activities.

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), or firms' effective tax rates (coeff.: -0.0027, *t*-stat: -2.45). Taken together, these sensitivity tests suggest that our main inferences are not confounded by these other firm attributes.

6.3.4 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 (1) 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 (β_i and φ_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) .

7. 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 archival event-study tests as well as field data to elucidate a specific channel through which detailed disclosure regulation can operate, namely by empowering pressure groups to impose reputational costs on disclosing firms.

We first document a negative average market reaction to legislative events that make strict implementation of the EPD rule more likely. In our cross-sectional main tests, we then provide evidence consistent with investors expecting the EPD regulation to be relatively more costly for firms exposed to higher reputational risk due to more intense public scrutiny. This finding is consistent with investors expecting pressure groups to use mandated EPD to force oil and gas firms to internalize negative externalities, e.g., with respect to relations with local communities or environmental activities. It further reflects the objective of the regulation to empower pressure groups to hold firms accountable for their extractive projects. These archival results are borne out by the complementary field evidence. Specifically, pressure groups' stated and revealed preferences strongly support detailed EPD, as these would facilitate campaigning against perceived corporate wrongdoing, while oil and gas firms are clearly opposed.

The results of our study are subject to the following limitations. First, our results speak to investors' *ex-ante* expectations about the consequences of the targeted disclosure regulation for firm value; these might differ from actual *ex-post* consequences. Second, 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. 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. For example, the relation might be due to higher detection risk of socially unaccepted behavior, or due to highly scrutinized firms being more vulnerable to public pressure (e.g., due to pressure groups being able to use negative stakeholder sentiment for media slant). 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 γ_i estimated from equation (2).	Own calculations (equation (1))
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

Appendix B: Pressure Groups' Use of Extraction Payments Disclosures

Table B1: 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 3. 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.

Panel A: Usefulness of EPD to pressure groups, and qualitative disclosure characteristics 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."

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."

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 extractive 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 extractive 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 B2: 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 B2: Use of Extraction Payments Disclosures by Pressure Groups (*cont'd*)

Panel B: Monitoring of firms' social and environmental impact (cont'd)	
Greenpeace 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 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]."

Panel C: Monitoring of revenue collection and corporate financial accountability	
Office of Natural Resources Revenue 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 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 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 C: 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 et al. 2015) and form an important input for firms' assessment for inclusion in sustainability indices such as the Dow Jones Sustainability Indices (RepRisk 2014). The use of these data in accounting and finance research has, however, been limited (for a recent exception, see Cui et al. 2018).

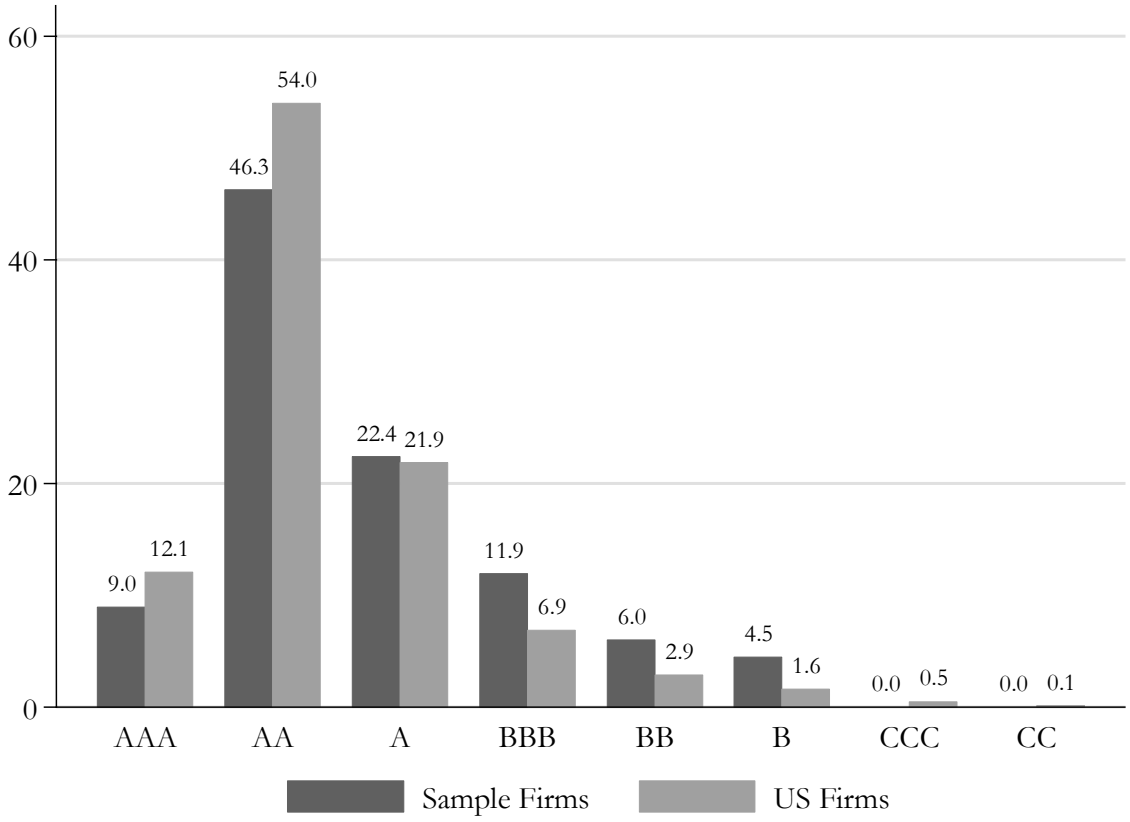
RepRisk screens 80,000 sources for a broad set of ESG information. Using a proprietary algorithm and expert analysts, RepRisk quantifies the information into metrics that reflect firms' exposure to stakeholder criticism (RepRisk 2016). Specifically, RepRisk offers two metrics: The RepRisk Indicator (RRI) 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, p. 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.

Figure C1 shows the distribution of RepRisk ratings for the sample firms (dark gray) as well as for all U.S. firms (light gray) during the sample period (2010-2015). None of the sample firms obtains a rating worse than B. This mirrors the overall distribution of ratings for US firms where less than 1% of firms obtain a rating worse than B. Consistent with the notion that the extractive industry is exposed to relatively

high public scrutiny compared to other industries, only 55% of the sample firms (compared to 66% of all US firms) obtain a rating of AA or better.

Figure C1: Distribution of RepRisk Ratings



Appendix D: 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).[23] 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 (for an overview of comment letter quotes, refer to Table D1 in this Appendix).

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 promotes investor protection and price efficiency,[24] the EPD was 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. Indeed, whereas the EPD attracted considerable attention from pressure groups (see Appendix B), comment letter analysis fails to identify a similar interest revealed by these groups for MOGR.

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. (2018, Appendix D) and described in Table D2 below: the concept release, the proposed rule, and the final rule. For all events, we present headlines from the Wall Street Journal's 'Business and Finance' section to screen for potential confounding events. Two events are potentially confounded by news about Exxon (an announcement of an investment and a court ruling). Our results remain unchanged to excluding Exxon.

[23] For a detailed overview of the changes introduced by MOGR, please refer to Badia et al. (2018, Appendix B).

[24] In the concept release, the SEC motivated its reform as follows: "[O]ur focus on the information needs of investors in public companies has caused us to continually re-evaluate the disclosure requirements of the federal securities law." (SEC Concept Release on Possible Revisions to the Disclosure Requirements Relating to Oil and Gas Reserves, Federal Register Vol. 72, No. 242: 71610)

Table D1: Comment Letter Quotes Illustrating Potential Competitive Costs of the MOGR

Note: This table provides quotes from comment letters to the SEC's proposed MOGR rule that illustrate the competitive concerns raised by oil and gas producers.

"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." (BHP, comment letter as of September 5, 2008)
"More importantly, we believe some of the proposed disclosures […] can cause competitive damage to the disclosing company in some instances. These disclosures would likely make the U.S. financial markets and U.S. oil and gas companies less competitive internationally and would seem to be inconsistent with recent Commission efforts to reduce the complexity of the U.S. reporting system." (API, comment letter as of August 20, 2008)
"In addition, several of the disclosures could cause competitive harm to the disclosing company (for example, anticipated exploratory activities; well drilling and production; anticipated capital investment in PUDs; remaining terms of leases and concessions; price and cost data)." (API, comment letter as of August 20, 2008)
"In addition, we believe disclosure of historical data regarding the drilling and conversion of PUDs will be useful information for investors, but believe mandating disclosure of forward-looking information regarding PUD development plans and drilling schedules would lead to unnecessary shareholder litigation and would require disclosure of too much information to a company's competitors." (Chesapeake, comment letter as of February 18, 2008)
We believe that mandating such detailed disclosures [i.e., expanded reporting on proven undeveloped reserves] for all registrants is not practical and may expose companies to the expense of defending lawsuits when future results differ materially from disclosed plans and also provides too much information to a company's competitors." (Chesapeake, comment letter as of February 18, 2008)
"The granularity of reporting should be maintained at its current level as described in SFAS 69 (country or region) rather than at "geographic area" levels as discussed in the proposed rules. Requiring granularity at the geographic area as defined in the proposed rules could be an onerous reporting burden for filers, and an unintended effect of damage to a competitive position could also result from such granular disclosures." (Devon, comment letter as of September 8, 2008)
"We believe that such detailed disclosures in a rigid geographic segmentation will result in many instances in a non optimal representation. In addition, the disclosures of information at field or basin level may jeopardize the company's negotiating position as well as asset sales. Moreover, the disclosures of information on particular fields could be restricted by local law or regulation. It would be unfortunate if a listing in the United States and related disclosure obligations were to put a company at a comparative disadvantage with its unlisted competitors." (Eni, comment letter as of September 8, 2008)
"Detailed disclosure at a field level, or potentially a 'basin' or 'play type' level, can compromise a registrant's competitive advantage." (Newfield, comment letter as of September 8, 2008)
"We recommend that the proposed rules not be revised to mandate disclosure of greater specificity of oil and gas reserves by "geographic area" as this has the very real potential for creating competitive disadvantage(s) (such as effects on transactions of material assets) for companies. As well, disclosure at this level may be prohibited by laws in other countries." (Petro Canada, comment letter as of September 8, 2008)

Table D2: Overview of Events (Modernization of Oil and Gas Reporting)

Note: This table summarizes events relating to the SEC's 'Modernization of Oil and Gas Reporting' (MOGR) rule. All three events received Wall Street Journal coverage. The table presents potential confounding events as identified by headlines in the Wall Street Journal's 'Business and Finance' section.

Event 1: Concept Release (12 Dec 2007) – Coverage in Wall Street Journal 'Business and Finance'
11 Dec 2007: "The Dow industrials gained 101.45 points, or 0.7%, to 13727.03, boosted by optimism about today's Fed meeting. Bonds fell."
12 Dec 2007: "The Fed cut interest rates by a quarter percentage point to 4.25%, the third reduction since August, and left the door open to further cuts. In response, the Dow industrials plunged 294.26 points, or 2.1%, to 13432.77, as many investors had hoped for a half-point cut. Bond prices rose, while crude jumped $2.16, or 2.5%, to $90.02 a barrel."
"Exxon plans to spend $1 billion to build a floating terminal off the New Jersey coast that would handle liquefied natural gas."
13 Dec 2007: "The Dow industrials rose 41.13 points to 13473.90 in a session marked by volatile intraday swings. Bond prices fell."
"Crude soared $4.37, or 4.9%, to $94.39 a barrel, the highest percentage gain since Jan. 30. U.S. inventory data showed an unexpected drop in crude stocks."
Event 2: Proposed Rule (26 Jun 2008) – Coverage in Wall Street Journal 'Business and Finance'
25 Jun 2008: "The Dow industrials fell 34.93 points to 11807.43. Despite a rebound in financial stocks, the index briefly crossed below its 2008 closing low."
"Leading companies in Italy's and Russia's energy sectors signed two deals valued at a total of about $3.65 billion."
"The SEC will propose removing barriers to U.S. investors trading with foreign brokerages, among other changes to foster a global market."
26 Jun 2008: "The Dow industrials rose 4.40 points to 11811.83 despite oil's drop, as stocks failed to sustain a modest rally after the Fed's expected move."
"The Supreme Court ruled a $2.5 billion punitive-damages award against Exxon in the 1989 Valdez oil spill shouldn't exceed $507.5 million."
"Precision Drilling again sweetened its unsolicited bid for land- drilling company Grey Wolf, to $2.19 billion."
27 Jun 2008: "The Dow industrials tumbled 358.41 points, or 3%, to 11453.42, as stocks fell to their lowest point of the year, pausing just above bear-market territory. As oil surged, financial shares declined on the back of downgrades by analysts and end-of-quarter worries about coming profit news."
"Crude surpassed $140 a barrel before settling at a record close of $139.64, up 3.8%."
"The SEC proposed allowing energy companies to include more data in reserve disclosures, a move that would boost those results. A debate about future supply is brewing."
Event 3: Final Rule (31 Dec 2008) – Coverage in Wall Street Journal 'Business and Finance'
30 Dec 2008: "Stocks trimmed losses but still ended lower as questions swirled about the viability of Dow Chemical's planned takeover of Rohm &Haas and Mideast tensions drove oil above $40 a barrel. The Dow industrials lost 31.62 points to 8483.93. The Nasdaq dropped 1.3%."
"The SEC revised rules on the way companies disclose oil and natural-gas reserves, a boost to energy firms."
31 Dec 2008: "Stocks rose, but with a day to go in 2008 the market is set to post its third-worst year ever. The Dow Jones Industrial Average, even after Tuesday's 184.46-point gain to 8668.39, is down 35% going into the year's final session. Global markets have similar losses."
2 Jan 2009: "Stocks enter 2009 trading after one of the most brutal years ever. The Dow Jones Industrial Average ended the year at 8776.39, down 4,488.43 points, or 33.8%, the weakest year since 1931. Most global markets fell even more, though India began 2009 with a rally Thursday."

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Figure 1: Reputational Risk and the Firm Value Effects of Disclosure Regulation

Note: This figure illustrates our prediction that reputational risk moderates the effect of the SEC's extraction payments disclosure rule (the disclosure regulation of interest) on firm value. As explained in Section 3.2, this moderating effect operates through firms' reputational disclosure costs.

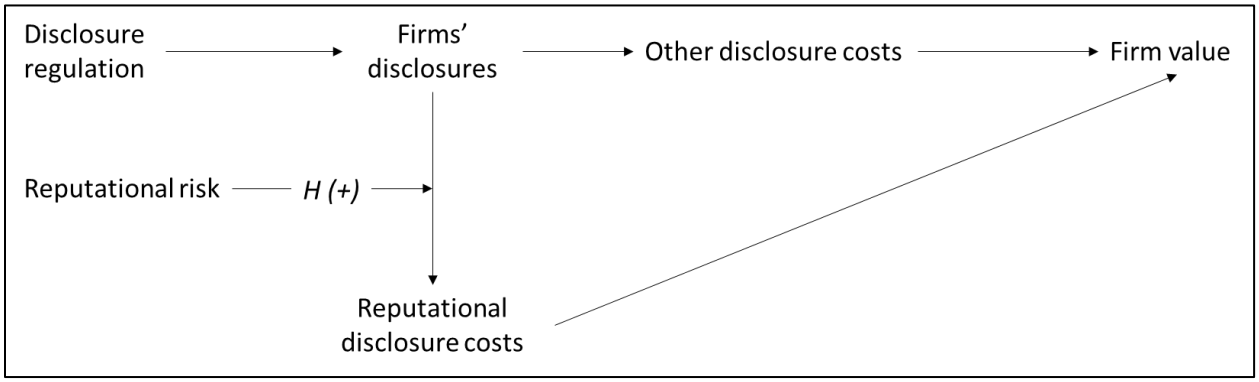

Figure 2: Distributions of Placebo Coefficients

Note: This figure presents results from a placebo analysis. For each cross-sectional determinant, we present the distribution of the coefficients obtained from 1,000 placebo regressions using random non-event dates mirroring the year-over-year distribution of our events as placebo event dates. The vertical lines present the coefficient estimates obtained from the true event dates. The simulated *p*-value is the fraction of cases in which the *t*-statistics from the placebo regressions exceed the *t*-statistics from the regressions using the true event dates.

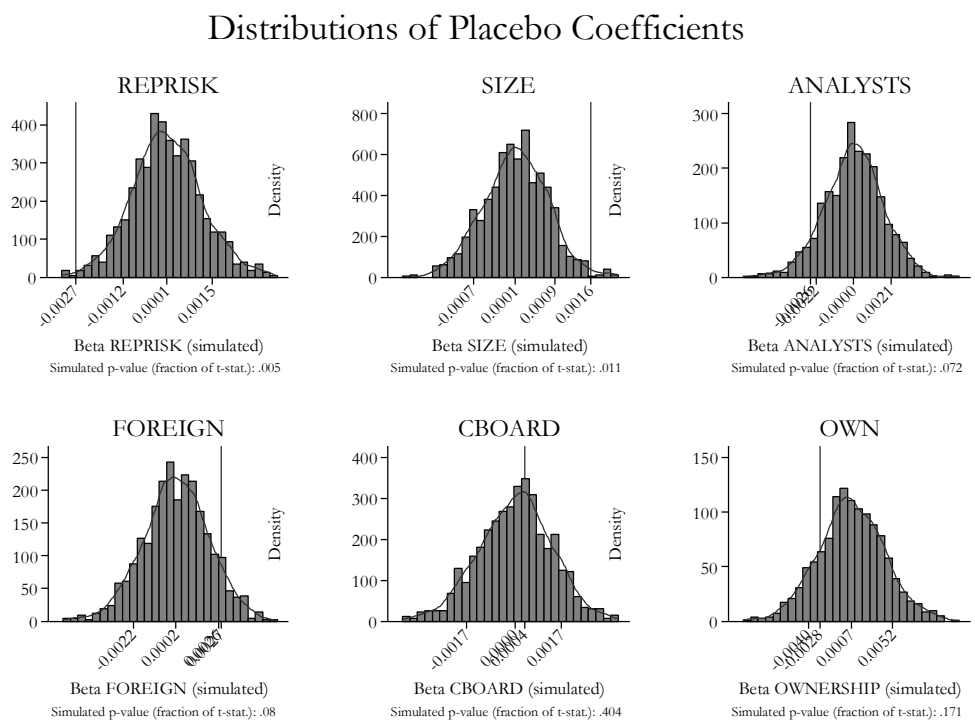

Table 1: Overview and Description of Events

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 and Table 5)		
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 1). 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: Summary Statistics

	N	Mean	SD	p25	p50	p75
ABN_RET (in %)	67.00	-0.39	0.47	-0.66	-0.39	-0.09
REPRISK	67.00	0.45	0.50	0.00	0.00	1.00
RRI	67.00	0.35	0.14	0.25	0.32	0.42
SIZE	67.00	8.05	1.84	6.73	8.18	9.32
ANALYSTS	67.00	2.68	0.68	2.25	2.89	3.25
FOREIGN	67.00	0.48	0.50	0.00	0.00	1.00
CBOARD	67.00	0.42	0.46	0.00	0.00	1.00
INST_OWN	67.00	0.77	0.24	0.64	0.84	0.95
DEV_RES	53.00	0.56	0.13	0.50	0.58	0.64
SALES_GR	66.00	0.23	0.29	0.05	0.16	0.28
STD_CF	67.00	0.06	0.05	0.03	0.06	0.08
ETR	67.00	0.32	0.22	0.17	0.36	0.40

Panel C: Correlations

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1)	ABN_RET	1.0000										
(2)	RRI	0.0500	1.0000									
		0.6876										
(3)	SIZE	0.2779	0.5967	1.0000								
		0.0228	*0.0000*									
(4)	ANALYSTS	-0.0545	0.4413	0.7370	1.0000							
		0.6616	*0.0002*	*0.0000*								
(5)	FOREIGN	0.3599	0.3391	0.3514	0.1149	1.0000						
		0.0028	*0.0050*	*0.0035*	*0.3544*							
(6)	CBOARD	-0.0860	-0.2321	-0.3272	-0.2038	-0.1949	1.0000					
		0.4890	*0.0588*	*0.0069*	*0.0981*	*0.1139*						
(7)	INST_OWN	-0.2160	0.0948	0.2954	0.5946	0.0121	-0.1690	1.0000				
		0.0791	*0.4452*	*0.0152*	*0.0000*	*0.9225*	*0.1715*					
(8)	DEV_RES	0.3119	0.0234	0.1087	-0.0448	0.0292	0.0455	-0.2480	1.0000			
		0.0230	*0.8681*	*0.4383*	*0.7501*	*0.8353*	*0.7462*	*0.0734*				
(9)	SALES_GR	-0.2503	-0.3265	-0.2309	-0.2568	-0.2503	-0.0189	-0.1605	-0.2718	1.0000		
		0.0427	*0.0075*	*0.0621*	*0.0374*	*0.0427*	*0.8805*	*0.1980*	*0.0513*			
(10)	STD_CF	-0.0333	-0.3633	-0.6835	-0.5206	-0.2093	0.2059	-0.4558	0.1244	0.0573	1.0000	
		0.7892	*0.0025*	*0.0000*	*0.0000*	*0.0891*	*0.0945*	*0.0001*	*0.3749*	*0.6475*		
(11)	ETR	-0.0041	0.1671	0.2073	-0.0022	0.3067	-0.1403	0.0924	-0.0035	0.1240	-0.0960	1.0000
		0.9736	*0.1766*	*0.0924*	*0.9861*	*0.0116*	*0.2574*	*0.4570*	*0.9800*	*0.3213*	*0.4399*	

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

Note: This table presents estimates of the cross-sectional determinants of firms' abnormal returns (equation 2). 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 methodology 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.

		Main Model (1)		RRI as main IV (2)		U.S. Properties Only (3)	
	Exp. Sign	Coeff. (*t*-stat)	R^2	Coeff. (*t*-stat)	R^2	Coeff. (*t*-stat)	R^2
REPRISK	**-**	**-0.0027****	**0.02**			**-0.0029***	**0.03**
		(-2.39)				**(-1.76)**	
RRI	-			-0.0087**	0.02		
				(-2.04)			
SIZE	+/-	0.0016**	0.21	0.0016**	0.20	0.0029**	0.23
		(2.52)		(2.50)		(2.40)	
ANALYSTS	+/-	-0.0026	0.01	-0.0023	0.01	-0.0080***	0.09
		(-1.46)		(-1.29)		(-2.89)	
FOREIGN	-	0.0027	0.06	0.0025	0.07		
		(1.54)		(1.48)			
CBOARD	+	0.0004	0.01	0.0002	0.01	-0.0002	0.02
		(0.30)		(0.15)		(-0.15)	
INST_OWN	+/-	-0.0028	0.05	-0.0035	0.06	0.0022	0.00
		(-0.79)		(-0.98)		(0.55)	
CONST	?	-0.0078	0.40	-0.0064	0.39	-0.0074	0.40
		(-1.36)		(-1.13)		(-0.95)	
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 identified in Table D1. 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 in Table D1). 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.

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

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

Electronic Companion

Electronic companion I:	Details on the SEC's Extraction Payments Disclosure (EPD) rule
Electronic companion II:	Further detail on EPD-related events
Electronic companion III:	Potential confounding events
Electronic companion IV:	Market reactions to individual events
Electronic companion V:	Sample comparisons (average market reaction sample vs cross-sectional tests sample)
Electronic companion VI:	Robustness tests

Electronic companion I: Details on the SEC's Extraction Payments Disclosure (EPD) rule

Table EC-I.1: Exercise of Discretion in SEC Rulemaking: 2010/2012

Note: This table provides an overview of selected aspects of SEC rulemaking on the extraction payments disclosure rule between 2010 and 2012. The first column summarizes the statutory requirements that have been added to the Securities Exchange Act 1934 by Section 1504 of the Dodd-Frank Act. The second and third columns show how the SEC exercised the discretion left by the statutory mandate in its rulemaking. In particular, the second column presents the implementation of these aspects in the proposed rule released by the SEC in December 2010. 'P' refers to the actual proposal, and 'R' refers to examples of aspects the SEC specifically invited constituents to comment on ('Request for Comment'). The third column presents the implementation as in the final rule issued by the SEC in August 2012.

Section 13(q) Securities Exchange Act of 1934	Proposed Rule 2010: Proposal (P) and Requests for Comments (R)	Final Rule 2012
	Information to be included in annual report filed with SEC	
"type and total amount of such payments made for each project of the resource extraction issuer relating to the commercial development of oil, natural gas, or minerals; and the type and total amount of such payments made to each government." (para. 2(A)) Tags required on total amounts of payments by category, currency used to make the payments, financial period, business segment, government that received the payment and its country, project, and other information as required by Commission (para. 2(D)(ii)(VII))	P: Type and total amount of payments made for each project; type and total amount of payments made to each government; total amounts of the payments, by category; currency used to make the payments; financial period in which they payments were made; business segment; government receiving the payments and its country; project to which payments relate (§229.105 (a))	Adopted as proposed (Item 2.01(a), Form SD)
	Definition of "resource extraction issuer	
"an issuer that (i) is required to file an annual report with the Commission; and (ii) engages in the commercial development of oil, gas, or minerals" (para. 1(D))	P: As in 13(q), but clarification that definition does include entities controlled by governments and does not include manufacturers of a product used in the commercial development of a resource or transportation service providers (II. C.) R: Exemptions (see below)	Adopted as proposed (§240.13q-1(b)) (no exemptions)

Table EC-I.1: Exercise of Discretion in SEC Rulemaking: 2010/2012 (*cont'd*)

Section 13(q) Securities Exchange Act of 1934	Proposed Rule 2010: Proposal (P) and Requests for Comments (R)	Final Rule 2012
	Definition of "payments"	
"any payment (…) to a foreign government or the Federal Government for the purpose of the commercial development of oil, natural gas, or minerals" (para. 2(A)) where "payment" includes "taxes, royalties, fees (including license fees), production entitlements, bonuses, and other material benefits" (para. 1(C)(ii))	P: List of payments as in section 13(q) R: Specification of "material benefits", inclusion of dividends in the list of payments and infrastructure improvements, explicit requirement to disclose "social and community payments", inclusion of payments in kind (II. D. 1.)	Adopted largely as proposed, dividends and payments for infrastructure improvements added to list of payments (Item 2.01(c)(6), Form SD); no inclusion of "other material benefits" in list; restriction to disclosure requirements to payments explicitly listed; no disclosure of "social and community payments"
Definition of "project"		
None	None R: Definition of "project", aggregation by country rather than project, restriction to material projects (II. D. 3.)	No definition; release makes general reference to contracts as basis and clarifies that project-level is more granular than country-level reporting; no materiality threshold
Exemptions		
De minimis payments (amount to be defined)	P: De minimis thresholds to be defined, no further exemptions R: Exemption of certain categories of issuers (e.g., smaller reporting companies, foreign private issuers, government-owned firms) (II. B.) R: Definition of de minimis payments (II. D. 2.) R: Exemption in case of disclosure under similar regimes (e.g., EITI)	De minimis threshold of $100,000 per single payment or series of related payments (Item 2.01(c)(7), Form SD) No further exemptions
	Disclosure format	
Submission to the Commission using an interactive data format (para. 2(C)) with electronic tags (para. 2(D)) "To the extent practicable, the Commission shall make available online, to the public, a compilation of the information" (para. (3)(A))	P: Disclosure of information in two exhibits to firms' 10-K (one in ASCII/HTML, one in XBRL), with reference in the 10-K; tags R: form and content of compilation	Introduction of new Form SD, with reference in 10-K, to be filed no later than 150 days after fiscal year-end; no confidential disclosure to SEC

Table EC-I.2: Exercise of Discretion in SEC Rulemaking: 2015/2016

Note: This table provides an overview of selected aspects of SEC rulemaking on the extraction payments disclosure rule in 2015 and 2016. The first column presents the implementation of selected aspects in the proposed rule released by the SEC as of December 2015. 'P' refers to the actual proposal, and 'R' refers to examples of aspects the SEC specifically invited constituents to comment on ('Request for Comment'). The second column presents the implementation as in the final rule issued by the SEC in September 2016 (after the end of the sample period).

Proposed Rule 2015: **Proposal (P) and Requests for Comments (R)**	**Final Rule 2016**
Information to be included in annual report filed with SEC	
P: As in final rule 2012, but additional information on the particular resource that is the subject of commercial development and the subnational geographic location of the project (Item 2.01(a) Form SD)	Adopted as proposed (Item 2.01(a) Form SD)
Definition of "resource extraction issuer"	
P: As in final rule 2012, but restriction to issuers filing Forms 10-K, 20-F, or 40-F (Item 2.01(c)(11) Form SD) R: Exemptions (smaller issuers, foreign private issuers)	Adopted as proposed (Item 2.01(d)(10) Form SD)
Definition of "payments"	
P: As in final rule 2012 (Item 2.01(c)(9) Form SD) R: Inclusion of "social and community payments"; need for additional guidance	Adopted as proposed, with community and social responsibility payments that are required by law or contract added to the list of payments (Item 2.01(d)(8) Form SD)
Definition of "project"	
P: "Project means operational activities that are governed by a single contract, license, lease, concession, or similar legal agreement, which form the basis for payment liabilities with a government. Agreements that are both operationally and geographically interconnected may be treated by the resource extraction issuer as a single project." (Item 2.01(c)(10) Form SD) R: Different definition (in particular, alternative to contract-based definition); interconnectedness of agreements; comparability with definition in EU Directives	Adopted as proposed (Item 2.01(d)(9) Form SD), additional guidance on interconnectedness of agreements (Instructions to Item 2.01 (12) Form SD)

Table EC-I.2: Exercise of Discretion in SEC Rulemaking: 2015/2016 (*cont'd*)

Proposed Rule 2015: **Proposal (P) and Requests for Comments (R)**	**Final Rule 2016**
Exemptions	
P: de minimis threshold of 100,000$ as in 2012 final rule R: Appropriateness of threshold, need for additional guidance P: Disclosure requirement can be satisfied by reference to an alternative reporting regime deemed by the Commission to be substantially similar ((Item 2.01(b)); exemptive relief can further be provided by the Commission on a case-by-case basis upon application) R: appropriateness of case-by-case assessment; information on foreign laws prohibiting disclosures; experience with treatment under EU Directives not granting such exemptions; criteria to determine "substantially similar" reporting regimes and alignment of these criteria with EU Directives; treatment of USEITI reports	De minimis threshold adopted as proposed (Item 2.01(d)(7) Form SD) Exemptive relief under alternative reporting regime largely adopted as proposed, with some clarification on the reporting format and language of the alternative report (Item 2.01(c) Form SD). EU and Canadian regimes are determined as substantially similar; USEITI disclosures are determined substantially similar with respect to payments to the US Federal Government (but need to be supplemented) Exemptive relief can be granted by Commission on a case-by-case basis (17 CFR 240.0-12)
Disclosure format	
P: XBRL exhibit to annual report using electronic tags using Form SD; no additional compilation made by the Commission to the public; no confidential filing with the Commission as in 2012 final rule R: tagging (e.g., on geography of project, additional information), (necessity for) compilation by Commission, confidential filings, exemptions from public disclosure	Adopted as proposed

Electronic companion II: Further detail on EPD-related events

This Electronic Companion provides detail (in addition to Table 1) about the process surrounding the SEC's implementation of the extraction payments disclosure (EPD) rule. Specifically, we describe the events selected as event dates for our main tests. We further provide information on regulatory events before (i.e., the Dodd-Frank Act) and after (i.e., the repeal of the EPD rule) our main sample period.

Description of selected 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[1]), 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; see Table EC-I.2 in Electronic Companion I for details). 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).

[1] 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).

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).

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.[2] 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).[3] 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).

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[2] 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).

[3] 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).

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 (for details, refer to Table EC-I.2). 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 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. As shown in detail in Table EC-I.2, 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).

Events prior to the main sample period: 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. In robustness checks, we explore whether our results are sensitive to the inclusion of events relating to the Dodd-Frank Act (Table EC-VI.1). In these tests, we use two different sets of events identified by prior literature as shown in Table EC-II.1. First, we use the events identified in Healy and Serafeim (2017). Second, we use an alternative a subset of events identified by Gao et al. (2018). Their study focuses on the impact of the Dodd-Frank Act on systemically important financial institutions, spanning events starting as early as January 2009. The Cardin-Lugar amendment, however,

was added relatively late in the legislative development of the Dodd-Frank Act. Therefore, we only use the last three events of Gao et al. (2018), as their earlier ones are unrelated to the EPD rule. We reproduce the events identified in Healy and Serafeim (2017) and Gao et al. (2018) in Table EC-II.1 below.

Table EC-II.1: Events prior to the main sample period

Note: This table reproduces events relating to the Dodd-Frank Act as identified by prior literature. In our robustness tests, we use three-day event windows surrounding the events identified by Healy and Serafeim (2017) (Panel A) and the specific event windows identified by Gao et al. (2018) (Panel B), respectively. The event numbers refer to the number of the events in the respective study.

Panel A: Events reproduced from Healy and Serafeim (2017, Appendix)

Event #	Date	Description
1	Jun 24, 2010	House-Senate Conference Committee holds a meeting on Wall Street reform and consumer protection
2	Jun 26, 2010	Dodd-Frank Wall Street reform and Consumer Protection Act passed
3	Jul 21, 2010	Dodd-Frank signed including section 1504

Panel B: Event windows reproduced from Gao et al. (2018, Table 1)

Number	Event period	Description
14	May 17, 2010 – May 21, 2010	The Senate passed the Dodd Bill
15	Jun 24, 2010 – Jun 25, 2010 & Jun 28, 2010 – Jun 30, 2010	Conference committee finished reconciling the House and Senate versions of the bills & the final bill was passed in the House
16	Jul 12, 2010 – Jul 16, 2010	The final bill was passed in the Senate

Events after the main sample period: repeal of the rule

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, 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. President Trump signed the repeal into law on 14 February 2017, sending the SEC back to the drawing board.

Table EC-II.1: Events after the main sample period

Note: This table summarizes events related to the repeal of the EPD rule (Panel A) and potentially confounding, contemporaneous events appearing in the Wall Street Journal's "Business & Finance" section (Panel B).

Panel A: Description of events

Event #	Date	Description
1	Jan 25, 2017	Majority leader McCarthy mentions the repeal in a press release
2	Feb 1, 2017	The joint resolution relating to the repeal is passed by the House
3	Feb 3, 2017	Senate votes to repeal the EPD rule
4	Feb 14, 2017	President Trump signs the repeal into law

Panel B: Confounding events identified in Wall Street Journal's "Business & Finance"-section

Event #	Date	Description
1	Jan 25, 2017	January 24, 2017 Trump pulled out of the 12-nation Pacific trade deal and promised to impose a border tax on companies that move some operations overseas. U.S. stocks, the dollar and yields on government bonds fell after Trump said he would shake up trade, taxes and regulation. January 25, 2017 Trump took steps to revive the Keystone XL and Dakota Access pipeline projects that were rejected under the Obama administration. Trump pledged to ease environmental regulations and cut corporate taxes for U.S. car manufacturers. The Dow jumped 112.86 points Tuesday to 19912.71, as the prospect of ramped-up building projects in the U.S. lifted shares of miners and manufacturers. January 26, 2017 The Dow industrials closed above 20000 for the first time, fueled by a rally that began in 2009 as a bounce from the depths of the financial crisis, grew into a steady ascent and was then turbocharged by November's presidential vote.
2	Feb 1, 2017	January 31, 2017 Trump's regulatory rollback, billed as the biggest action since the Reagan era to cut red tape, could have farreaching impacts on businesses and the economy. U.S. stocks stumbled, with the Dow industrials losing 122.65 points to 19971.13, the index's worst day since the election. February 1, 2017 Exxon said it wrote down the value of more than $2 billion in U.S. assets and posted its lowest annual earnings in 20 years. February 2, 2017 Currency-market volatility is increasing as investors and traders try to discern the likely path of Trump administration policy.

3	Feb 3, 2017	February 3, 2017 Trump plans to sign an executive action to scale back Dodd-Frank, in a broad plan to dismantle much of the regulatory system established after the financial crisis. Trump's potential impact on business has been a point of discussion in earnings calls at many S&P 500 firms. The S&P 500 edged higher as consumer-staples shares rallied. The Dow eased 6.03 points to 19884.91. February 4, 2017 A bank-stock rally sent the Dow up 186.55 points to 20071.46, its biggest one-day gain in nearly two months.
4	Feb 14, 2017	February 13, 2017 The U.S. energy sector, the market's best-performing in 2016, has cooled this year, due in part to overly optimistic crude-price forecasts. OPEC said January oil output dropped, confirming its members have so far largely complied with cuts. February 14, 2017 none February 15, 2017 none

Electronic companion III: Potential confounding events

Table EC-III.1: Potential confounding events

Note: This table presents information on 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).

Event #	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.

Table EC-III.1: Potential confounding events (*cont'd*)

Event #	Likelihood	Wall Street Journal "Business and Finance"-Section
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.

Electronic companion IV: Average market reactions to individual events

In this Electronic Companion, we present and discuss results of our multivariate regression model of firms' average market reactions (equation 1) to the twelve regulatory events identified in Table 1. To that end, we decompose the *EVENT* variable into dummy variables for individual event windows. Table EC-IV.1 presents the results. Of the twelve events, five show significant coefficients with the expected signs. One coefficient (relating to event #8) is significant at the 5% level, but not in the expected direction. Overall, results from individual events support the conclusion from the pooled event analysis.

Studies employing a similar methodology also commonly show some lack of significance with respect to 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 et al. 2010). 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 EC-II.1). 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.

Table EC-IV.1: 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.

	Epx. 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		132,105
Adj. R2		0.205
# of Clusters		1,407

Electronic companion V: Sample comparisons (average vs cross-sectional tests sample)

This Electronic Companion assesses the implications of the sample selection requirement of having a RepRisk rating. Table EC-V.1 compares abnormal returns and control covariates of (a) the sample of 94 firms with available return data on CRSP to estimate the average market reaction ('Returns Sample') to (b) the subset of 67 firms with an available RepRisk rating which we use in the cross-sectional analyses ('RepRisk Sample'). While the difference in abnormal returns across the two samples is both small in magnitude and statistically insignificant, firms in the RepRisk sample are significantly larger in terms of both average market value of equity and number of analysts. Consistent with institutional investors being key users of RepRisk business intelligence, firms in the RepRisk sample have a significantly higher share of institutional ownership. Apart from these differences, firms in the full sample and the RepRisk sample do not differ in terms of location of their operations, staggering of their board, and the development stage of their reserves. We conclude from this comparison that, while the results of the cross-sectional analyses might not generalize to smaller firms, they are unlikely to be confounded by other firm characteristics such as a firm's corporate governance or business risk.

Table EC-V.1: Comparison of average market reaction and cross-sectional tests sample

Note: This table presents differences in the main variables across samples. It compares firms' abnormal returns and control variables between a sample of all firms with available returns data during event windows ("Returns Sample") to the set of firms used for the cross-sectional analyses with a rating available on RepRisk ("RepRisk Sample").

	Returns Sample		RepRisk Sample		Diff	*t*-stat.	*p*-value
	Mean	N	Mean	N			
ABN_RET (in %)	-0.39	94	-0.39	67	0.01	0.07	0.94
SIZE	7.21	94	8.05	67	-0.85	-2.53	**0.01**
ANALYSTS	2.25	94	2.68	67	-0.43	-3.02	**0.00**
FOREIGN	0.41	94	0.48	67	-0.06	-0.79	0.43
CBOARD	0.39	93	0.42	67	-0.03	-0.35	0.73
INST_OWN	0.65	93	0.77	67	-0.12	-2.44	**0.02**
DEV_RES	0.57	79	0.56	53	0.01	0.38	0.71
SALES_GR	0.26	92	0.23	66	0.03	0.67	0.50
STD_CF	0.07	94	0.06	67	0.01	0.59	0.56
ETR	0.31	94	0.32	67	-0.02	-0.42	0.68

Electronic companion VI: Robustness tests

Table EC-VI.1: Sensitivity to alternative event selection

Note: This table provides results for sensitivity tests using alternative selections of events. In Panel A, we estimate our main specification including events relating to the Dodd-Frank Act as identified in Healy and Serafeim (2017) (column 1), events relating to the Dodd-Frank Act as identified in Gao et al. (2016) (column 2), and excluding events that might also relate to the SEC's conflict minerals rule (i.e., events #1, #4, #8, and #9 in Table 1; column 3). In Panel B, we estimate our main specification using only eleven events, excluding one event at a time. The rows present the results for the coefficient and *t*-statistics (computed as in our main tests) on *REPRISK* with the k-th event being excluded. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Including / excluding events on related legislation

	Incl. Dodd-Frank		Excl. Conflict Minerals
	(1)	(2)	(3)
REPRISK	-0.0020**	-0.0017*	-0.0028**
	(-1.99)	(-1.76)	(-2.07)
Controls	YES	YES	YES
N	1,407	1,407	1,395
Adj. R^2	0.02	0.02	0.02
# of Firms	67	67	67

Panel B: Exclusion of the k-th event

	REPRISK, with the k-th event excluded
k=1	-0.0026**
	(-2.21)
k=2	-0.0026**
	(-2.21)
k=3	-0.0029**
	(-2.49)
k=4	-0.0030***
	(-2.63)
k=5	-0.0024**
	(-2.09)
k=6	-0.0024**
	(-2.06)
k=7	-0.0027**
	(-2.29)
k=8	-0.0033***
	(-2.86)
k=9	-0.0018
	(-1.56)
k=10	-0.0026**
	(-2.28)
k=11	-0.0031***
	(-2.71)
k=12	-0.0024**
	(-2.11)

Table EC-VI.2: Market reactions to the EPD rule's repeal in 2017

Note: This table presents evidence on the repeal of the extractions payments disclosure rule in 2017. Panel A presents the average market reactions. In column (1), we use only the first event relating to the repeal. In column (2), we use the first event and the passing of the related bill in the house and the senate. In column (3), we use all events, including the signing of the bill into law. In column (4), we include a separate dummy variable for each individual event. Panel B presents the cross-sectional analyses. In Column (1), we use only the first event relating to the repeal. In column (2), we use the first event and the passing of the related bill in the house and the senate. In column (3), we use all events, including the signing of the bill into law. The number of observations is the number of trading dates between January 2016 and March 2017, less excluded event windows in column (1) and column (2). 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.

Panel A: Average market reactions

	(1)	(2)	(3)	(4)
MKT_RET	1.5890***	1.5968***	1.5958***	1.5920***
	(9.03)	(9.11)	(9.11)	(9.08)
OIL_RET	0.4973***	0.4951***	0.4955***	0.4963***
	(7.93)	(7.92)	(7.94)	(7.94)
EVENT	**-0.0011**	**0.0027**	**0.0033**	
	(-0.58)	**(0.97)**	**(1.39)**	
Event #1				0.0012
				(0.60)
Event #2				-0.0060
				(-1.07)
Event #3				0.0012
				(0.24)
Event #4				-0.0049
				(-1.35)
Constant	0.0003	0.0003	0.0003	0.0003
	(0.31)	(0.31)	(0.31)	(0.27)
Adj. R2	0.17	0.17	0.17	0.17
N	23,206	23,616	23,862	23,862
# of Clusters	283	288	291	291

Panel B: Cross-sectional analyses

		(1)		(3)		(3)	
	Exp. Sign	Coeff. (*t*-stat)	R^2	Coeff. (*t*-stat)	R^2	Coeff. (*t*-stat)	R^2
REPRISK	**-**	**-0.0082**	**0.02**	**-0.0031**	**0.02**	**-0.0032**	**0.02**
		(-1.35)		**(-0.82)**		**(-1.01)**	
SIZE	+/-	0.0044	0.07	0.0018	0.07	0.0017	0.07
		(1.08)		(0.71)		(0.77)	
ANALYSTS	+/-	-0.0125	0.00	-0.0076	0.00	-0.0076	0.01
		(-1.07)		(-1.07)		(-1.24)	
FOREIGN	-	0.0088	0.05	0.0020	0.05	0.0014	0.05
		(0.88)		(0.33)		(0.27)	
CBOARD	+	0.0009	-0.01	0.0013	-0.01	0.0013	-0.01
		(0.09)		(0.22)		(0.25)	
INST_OWN	+/-	0.0086	0.01	0.0171	0.01	0.0128	0.01
		(0.36)		(1.19)		(1.03)	
CONST	?	-0.0099	0.27	-0.0047	0.27	0.0012	0.27
		(-0.28)		(-0.22)		(0.06)	
N		283		288		291	
# of Firms		61		61		61	

Table EC-VI.3: Sensitivity to additional control variables

Note: This table provides results for sensitivity tests using additional control variables. In column (1), we augment our cross-sectional model of equation (1) by adding *DEV_RES*, an additional variable capturing the share of firms' developed over total reserves. In column (2), we include sales growth (*SALES_GR*) and standard deviation of cash flows (*STD_CF*) as additional cross-sectional variables capturing firms' business and litigation risk (Kim and Skinner 2012). In column (3), we include *ETR*, a firm's effective tax rate. Following the procedure proposed by Sefcik and Thompson (1986), standard errors in parentheses 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.

		Developed Reserves (1)		Litigation Risk (2)		Effective Tax Rate (3)	
	Exp. Sign	Coeff. (S.E.)	R^2	Coeff. (S.E.)	R^2	Coeff. (S.E.)	R^2
REPRISK	**-**	**-0.0039*** (-2.68)**	**0.01**	**-0.0026** (-2.22)**	**0.01**	**-0.0027** (-2.45)**	**0.02**
SIZE	+/-	0.0015** (2.08)	0.17	0.0021*** (3.14)	0.13	0.0018*** (2.84)	0.22
ANALYST	+/-	-0.0036* (-1.86)	0.04	-0.0035** (-1.97)	0.02	-0.0033* (-1.94)	0.02
FOREIGN	-	0.0038* (1.74)	0.06	0.0023 (1.26)	0.04	0.0031* (1.80)	0.07
CBOARD	+	-0.0001 (-0.08)	0.00	0.0003 (0.25)	0.02	0.0003 (0.26)	0.01
INST_OWN	+/-	0.0000 (0.00)	0.03	-0.0007 (-0.19)	0.06	-0.0018 (-0.50)	0.05
DEV_RES	+	0.0074 (1.46)	0.03				
SALES_GR	-			-0.0024 (-0.82)	0.03		
STD_CF	-			0.0250 (1.05)	0.02		
ETR	+					-0.0044 (-1.47)	0.01
Constant	?	-0.0099 (-1.57)	0.37	-0.0121* (-1.78)	0.21	-0.0072 (-1.27)	0.40
N		1,407		1,407		1,407	
# of Firms		53		66		67	

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