Shareholder voting: A complementary mechanism to mandatory disclosure regulation

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Abstract

We offer that, when regulators require firms to obtain stakeholder approval of a corporate decision through voting on a resolution, firms disclose additional information that is needed for stakeholders to understand the optimal nature of the proposal and to vote in favor of it. We suggest that this indirect regulatory approach to disclosures can induce firms to reveal useful information over and beyond that achieved through mandated disclosures alone. The study documents the effectiveness of this mechanism in the context of Say-on-Pay rules relating to executive compensation. The analyses reveal that, even though firms were previously required to provide detailed compensation-related disclosures, the passage of the SoP rule increased disclosures further, especially among firms that had seemingly excessive pay packages. Also, firms that had previously failed their SoP voting or had received an 'Against' recommendation from a proxy advisor increase their compensation-related disclosures disproportionately. These additional disclosures also help the firms achieve better subsequent SoP voting outcomes. We conclude that stakeholder-voting regulations can be an effective tool for improving corporate disclosures.

Keywords: Disclosure regulation, Say-on-Pay, executive compensation, key performance indicators, textual disclosures
JEL codes: G30, M12, M41

1. Introduction

How can regulators encourage corporations to improve their disclosures? One direct approach is to increase mandatory disclosures that stipulate a specific list of information to be disclosed through regulatory filings or urge firms to provide voluntary disclosures. But as prior studies show, these approaches are not always entirely successful. Calls for greater voluntary disclosures sometimes go unheeded, and mandatory disclosures do not necessarily satisfy users' demand for information (Leuz and Wysocki, 2016). By presenting details in a way that is hard to understand or requires processing effort that is disproportionate to its benefits, firms can meet disclosure requirements without necessarily aiding the investors or lowering information asymmetry.[1]

Given these limitations, what else can regulators do to encourage effective disclosures by firms? We offer that stakeholder-voting regulations can encourage effective disclosures *that are incremental to those obtained through direct disclosure rules* alone, and document the effectiveness of this approach in the context of the "Say on Pay" (SoP) voting requirement that was introduced by the SEC in 2011. Specifically, we find that mandatory SoP voting requirements have encouraged firms, especially those with seemingly excessive pay packages, to provide *additional* disclosures of performance metrics, even though the direct disclosure regulations (i.e., Regulation S-K) issued five years earlier that mandated disclosure of compensation-relevant performance metrics remained the same. As we argue and show later, disclosure rules mainly incentivize firms to reveal information to the extent needed to comply with the law, whereas stakeholder voting can induce firms to go beyond these disclosure levels.

We contend that stakeholder voting encourages disclosures that are informative to investors by linking the costs of non-disclosure to the outcomes of the disclosed information, viz., stakeholders' voting decisions made using the disclosed information. More specifically, when regulations require firms to obtain stakeholder approval of a corporate decision through their voting on a resolution, the onus falls upon the firm's management or its board to ensure that the stakeholders have all the necessary information to understand the firm's proposal and vote in favor of it. Failure to provide the necessary information increases the chances of stakeholders rejecting management proposals and the firm or its managers facing the attendant costs, such as accepting second-best solutions, giving up value-enhancing activities or not being able to undertake their "pet" projects. The lesser the disclosures or their clarity to the

[1] For example, when selling small items on Internet websites, firms disclose many pages of terms and conditions to their customers that are often ignored by consumers. While these disclosures might meet specific regulatory requirements, they do not necessarily keep consumers fully informed of their legal rights and risks.

voting stakeholders, the more likely that the management's proposals are rejected, imposing greater costs on the firm or its managers. That is, a manager's or a board's incentive to reveal information increases with the likelihood of adverse voting outcomes.[2] We refer to this approach to stimulating disclosures as the indirect regulation of disclosures and discuss its details, including its advantages over the direct disclosure rules, in Section 2.

Although indirect regulation has the potential for improving disclosures, it does not automatically imply that it will generate greater disclosures than those obtained through direct disclosure mandates or through pre-existing managerial incentives for voluntary disclosure. This is because, direct disclosure mandates or voluntary disclosures incentives alone may be sufficient for firms to reveal all relevant information to the users. In such a case, stakeholder voting will achieve little by way of additional disclosures. Also, in the presence of agency problems, where management proposals might be sub-optimal, firms may obscure the true rationale underlying their decisions and resist increased demands for information from stakeholders. In these cases, managers would either ignore calls for greater disclosures, citing proprietary costs and other reasons for their non-disclosure, and instead restrict their disclosures to the minimum needed to comply with direct disclosure rules.

A key challenge in empirically evaluating the efficacy of the indirect regulation approach is that it is hard to isolate the *incremental* disclosure effects of the indirect regulation, i.e., the disclosures obtained over and above those arising from direct disclosure mandates alone. This is because, disclosure requirements are often introduced simultaneously with the adoption of stakeholder voting laws. In this context, the SoP rule (adopted by the SEC in 2011 and which requires firms to periodically allow shareholders to vote on their executive remuneration package) presents a unique opportunity. As early as five years before the SoP adoption, the SEC had already imposed detailed disclosure requirements for firms with respect to their executive compensations through Regulation S-K. Further, the SoP rules did not materially alter the disclosure requirements,[3] implying that changes in compensation-related disclosures following SoP adoption are causally attributable to the SoP mandate and are

[2] Prior studies (e.g., Armstrong, Core and Guay, 2014) show that a firm's information environment and transparency are associated with changes in the firm's corporate governance. This is, however, different to the indirect disclosure regulation, as the disclosure effects of general governance changes are too complex and ex-ante unknown (e.g., Dechow et al., 2010). Also, governance changes may have no effect on public disclosures, if information-sharing associated with these changes occur through private channels. Finally, general governance regulations may not achieve disclosures of a specific type of information, like the ones that are feasible through regulations of specific types of management-proposals.

[3] The SoP-related regulation required additional disclosures only in extraordinary circumstances where the golden parachute payments at the time of mergers or takeovers are involved.

incremental to the effects of both pre-existing disclosure rules and voluntary disclosure incentives. The SoP setting also offers several other advantages that we discuss in Section 3.

Extending the indirect regulatory effect to the case of SoP voting, we hypothesize that the SoP rule adoption could increase compensation-related disclosures. This is because non-disclosure of information in the post-SoP period is more costly, as it increases the odds of dissent voting and the attendant risks of litigation and reputational losses. Although these disclosures were required in the pre-SoP period, boards may have been reluctant to reveal all relevant information and may have instead focused on providing the minimum disclosures required by law to obscure agency problems and lower overall disclosure costs. This possibility is particularly relevant as Regulation S-K made sweeping and controversial changes to compensation-related disclosures, with over 20,000 comment letters submitted to the SEC when these rules were first proposed in January 2006. In such a scenario, the SoP rule adoption could act as an impetus for further disclosures.

However, it is also possible that the passage of the SoP rules may not have materially impacted a firm's disclosure policy. Boards may not have improved their disclosures if they thought that the shareholders already had all the relevant information provided under Regulation S-K and that the cost of additional disclosures was too high to warrant any further disclosures. This would also be the case, if boards felt that shareholders' voting decisions are not sufficiently sensitive to the improved disclosures, such as would occur if shareholders either voted apathetically or relied excessively on proxy advisors' recommendations that were derived through box-ticking exercises. Lastly, boards may also have resisted increased demand for information if such disclosures would have allowed investors to unravel board capture and managerial rent-seeking.[4]

We empirically test the effect of the SoP mandate on disclosures by focusing on firms' decisions to disclose key performance indicators (KPIs) in their compensation-related filings. KPIs play a key role in helping investors to understand remuneration targets, to identify pay-performance misalignments, and to uncover mitigating factors for seemingly excessive pay, such as performance-based awards designed to drive specific strategies (Institutional Shareholder Services, 2013). Underscoring their importance for evaluating executive remuneration, Regulation S-K requires firms to disclose the performance metrics used in compensation decisions and a survey of institutional investors indicates that 62% of its

[4] Bertrand and Mullainathan (2001), Bebchuk et al (2002) and Bebchuk and Fried (2004) point out that executives exert significant influence on boards of directors, and such influence allows the executives to extract rents in the form of excessive compensation.

respondents rely on the disclosed metrics for their SoP voting decisions (Larcker and Tayan, 2015).

We obtain a standardized measure of KPI disclosures by parsing all of the definitive proxy statements and additional proxy materials filed by U.S. listed firms between 2007 and 2016.[5] To address the potential endogeneity concerns between disclosures and SoP voting outcomes, we exploit the first-time adoption of the SoP mandate in 2011 as an exogenous shock to disclosure incentives and conduct a difference-in-differences analysis that examines whether firms with seemingly excessive executive pay provide more compensation-related disclosures relative to firms with more reasonable executive remuneration.

Consistent with the predictions of the indirect regulatory approach, our results reveal that firms provide significantly more KPI information in their proxy materials upon SoP rule adoption. More interestingly, this change is larger for firms whose executive compensation appear to be more excessive, which is consistent with these firms facing greater odds of a shareholder revolt at the SoP vote and, therefore, having greater incentives to provide the additional disclosures. Since these firms were already complying with the pre-SoP mandatory disclosure requirements under Regulation S-K, their disclosure changes in the post-SoP period reflect the incremental effects of the SoP mandate. A parallel-trends analysis around 2011 and an investigation of KPI disclosures in annual reports, as opposed to proxy materials, also confirm that these changes are causally attributable to the SoP mandate.

To identify the drivers of additional disclosures following the SoP voting requirement, we investigate how firms change their disclosure strategy when faced with a greater likelihood of or increased damages from a SoP vote failure. Specifically, we examine the disclosure responses of two sets of firms to changes in their investors' demand for information around SoP-related events: (1) Firms that receive an 'Against' recommendation from Institutional Shareholder Services (ISS), an influential proxy advisory firm; and (2) Firms that failed to win shareholder approval in a prior SoP vote. As Regulation S-K required these firms to disclose compensation-related information in their proxy materials even before these trigger events,

[5] Unless otherwise stated, "disclosures" refers to disclosures in proxy materials. The SEC defines Form DEF 14A as "definitive proxy statements," and Forms DEFA 14A, DEFC 14A, DEFM 14A, and DEFR 14A as "additional proxy materials." We maintain this same nomenclature and refer to all of these forms combined as "proxy materials" or "proxy filings." Furthermore, for ease of reference, our discussions mention only Form DEFA 14A as constituting "additional proxy materials." We do this because other forms (viz., DEFC 14A, DEFM 14A, and DEFR 14A) are relatively rare in our sample of additional proxy materials.

subsequent changes to disclosures can be uniquely attributed to the incentives arising from the increased costs of a SoP dissent vote.[6]

ISS is one of the largest and most influential proxy advisors (Hauder, 2014; Murphy, 2013). Prior studies have documented that an 'Against' recommendation from ISS causes a significant rise in the likelihood of a SoP dissent vote, with its attendant reputational costs (Malenko and Shen, 2016). Thus, the ISS 'Against' recommendation shifts the net benefits of disclosures that should induce firms to file additional proxy materials (DEFA 14A) as rebuttals to the ISS recommendation, with more information to justify and explain the proposed executive compensation. As firms cannot materially alter their past years' executive pay or their underlying compensation structures, the additional proxy materials provide an excellent setting for isolating the disclosure responses to the SoP voting as well as for identifying the effects of the *new* disclosures on the SoP voting outcomes.[7] Similarly, firms that fail a SoP vote are likely to attract greater scrutiny from shareholders and proxy advisors at subsequent SoP votes and may face intensified reputational damages from a repeat of the adverse voting outcome.[8] Such failures can increase the costs of non-disclosures at subsequent occasions for SoP voting, causing boards to respond with greater disclosures.

Consistent with the SoP voting mandate incrementally incentivizing firms to disclose information, our empirical analyses reveal that when a firm receives an ISS 'Against' recommendation, it is more likely to file additional proxy materials prior to the SoP voting and include disproportionately more KPI disclosures in these filings compared to other firms. The KPI disclosures in the additional proxy materials of firms receiving an ISS 'Against' recommendation also have a more positive effect on the voting outcomes relative to KPI disclosures given in the original definitive proxy statements, confirming that these additional disclosures are informative to investors. Further, when firms receive a dissenting SoP vote, they increase their KPI disclosures ahead of the next SoP vote and these increased disclosures are also incrementally informative for investors, as seen by their positive relation with the SoP voting outcomes.

[6] In line with the 2011 ISS guidelines and the prior literature on SoP voting (viz., Ertimur, Ferri and Oesch, 2013 and Malenko and Shen, 2016), we define a failed SoP vote as failure to receive more than 70% shareholder votes on the mandatory SoP proposal and classify these as instances of shareholder dissent.

[7] Examples of firms that chose to file additional proxy materials through form DEFA 14A in response to ISS "Against" recommendations for SoP voting include Hewlett-Packard Co. in 2011, Alleghany Corp. in 2014, and Broadcom Corp. in 2014.

[8] Our sample consists of 557 firm-year observations with less than 70% SoP voting support post 2011, of which 154 had also received less than 70% shareholder support on their previous SoP votes.

Our study makes several important contributions to the disclosure and regulations literature. To the best of our knowledge, we are the first to show that stakeholder-voting mandates can be a useful tool for regulators to predictably influence disclosures and most importantly, these effects are over and above those of direct disclosure regulations. Over time, the SEC has mandated more comprehensive disclosures of information on executive pay.[9] Our findings suggest that, by linking firms' penalties to decisions made by users relying on disclosed information, the SoP mandate has been able to incentivize firms to improve executive remuneration disclosures. Our study uncovers a complementary mechanism to mandated disclosures, which incentivizes firms to increase disclosures for users, allows greater flexibility in their disclosure decisions and lessens the need for enforcement by regulators.

While our findings are relevant to regulators who are constantly balancing investors' disclosure needs against the imposition of undue costs on firms (e.g., SEC's disclosure-effectiveness initiative[10]), we strongly caution against drawing conclusions on the optimality of indirect regulation from these findings. This is because our analysis does not consider all of the costs (which includes both direct costs as well as negative real consequences) and benefits of holding stakeholder votes or the externalities associated with increased disclosures. Also, in line with the broader disclosure literature, we do not study whether the additional compensation-related disclosures induced by SoP voting are necessarily truthful.

Our study also contributes to the literature on SoP and, more generally, on shareholder voting. Much of the regulatory activity and debate on shareholder voting is predicated on the notion that such voting influences corporate behavior (e.g., Dodd–Frank Wall Street Reform and Consumer Protection Act). The empirical evidence on effectiveness of shareholder voting in effecting real changes, however, is mixed (e.g., Armstrong et al., 2013; Correa and Lel, 2016; Kronlund and Sandy, 2018; Iliev and Vitanova, 2019). In contrast, we show that the SoP regulation has had a direct effect on compensation-related disclosures.[11] Shareholder voting regulations, even if ineffective in directly changing real outcomes, can be useful tools for

[9] In October 1992, the SEC required companies to provide a chart showing their five-year stock-price performance, relative to the market and relative to an industry peer group, and to disclose more information on stock-option grants, exercises, and holdings. More recently, the SEC required firms to disclose the ratio of the CEO's pay to the median employee pay beginning August 2015. Finally, in April 2015, the SEC adopted a proposal requiring public firms to disclose how well the top managers' pay tracked corporate performance over prior several years.
[10] The SEC's ongoing disclosure-effectiveness initiative, which grew out of an appraisal of Regulation S-K in December 2013, comprehensively reviews the disclosures required of companies with a view to facilitating timelier and simpler information dissemination in a manner that is beneficial to both companies and investors.
[11] Our findings also add credence to claims made by practitioners that, in the post-SoP period, when managers engage with shareholders on SoP, it often leads to firms increasing their compensation-related disclosures (Semler Brossy Consulting Group, 2012; Ernst & Young, 2012 and Miller and Asayag, 2011).

improving disclosures. Moreover, these regulations can be effective even if the voting outcomes are not binding on the management, as is the case with SoP votes.

Our paper also has implications for studies examining market reactions to shareholder voting resolutions. Prior studies report a significant increase in firm value at announcements of SoP rule adoption, but as some of them acknowledge (e.g., Correa and Lel, 2016), the attendant executive-pay decreases are too small to justify the value changes. Our findings allude to the possibility that the market reactions to SoP adoption reflect not only the direct effects of the regulation but also its indirect disclosure effects.

Lastly, our paper is also related to the literature on the roles of market-based incentives and regulations in determining reporting quality. Prior studies (e.g., Ball, Robin and Wu, 2003; Ball and Shivakumar, 2005, and Burgstahler, Hail, and Leuz, 2006) argue and show that investors' demand for information are more important than legal standards in determining earnings quality. This study extends these arguments and findings to the context of non-financial disclosures.

The paper's findings are very relevant to the SEC's ongoing disclosure-effectiveness initiative aimed at identifying ways to reduce the costs and burdens on companies while still providing material information to investors. Our study uncovers a complimentary mechanism to mandated disclosures, which incentivizes firms to provide new and informative information for users but at the same time allows firms greater flexibility in the quality, quantity and method of their disclosures and lessens the need for enforcement by regulators.

The remainder of this paper is organized as follows. Section 2 expounds the indirect regulatory approach for disclosures and Section 3 presents the institutional details of the SoP setting. We present our hypotheses in Section 4 and discuss the measurement of key empirical metrics and the research design in Section 5. Section 6 discusses the sample and presents the data, and Section 7 explains the empirical results. Section 8 presents our conclusions.

2. Current Disclosure Mechanisms and the Indirect Regulation of Disclosures

This section discusses the limitations of existing mechanisms for encouraging disclosures, viz., through voluntary and mandatory disclosures, and then develops the rationale for indirect disclosure regulation. We then point out the advantages and limitations of the indirect regulatory method relative to the existing disclosure mechanisms.

2.1. Effectiveness of voluntary and mandatory disclosures

Disclosures in financial markets serve three main purposes (Enriques and Gilotta, 2014). They (1) protect investors and enhance their confidence to participate in the securities markets,

(2) mitigate agency problems by allowing better governance and oversights of firms, and (3) enable financial markets to efficiently allocate scarce financial resources across the economy by enabling stock prices to fully reflect all value relevant information. Unfortunately, these benefits do not always translate into voluntary disclosure of relevant information by firms on account of managers' self-interests, weak incentives and externality problems. Also, the extent to which voluntary disclosure mitigates resource misallocation in the capital market depends on the uniqueness and degree of credibility of the revealed information. As a result, voluntary disclosures by themselves are insufficient to achieve socially optimal levels of disclosures, highlighting the need for disclosure regulations.[12]

Mandated disclosures are ubiquitous, with disclosure regulations often trying to balance the benefits of greater disclosures against their direct and indirect costs. However, mandated disclosures too suffer from a variety of limitations. First, mandated disclosures fail to incentivize individual firms to tailor their disclosures to stakeholders' needs. In fact, by linking the financial penalties for non-compliance to the disclosed information rather than to their usefulness to investors, the rules merely incentivize firms to reveal a pre-specified information set rather than to aid users' decision-making. Also, regulations do not reward firms for going beyond the bare minimum required for compliance. Consequently, to minimize disclosure costs, firms are more likely to adopt a box-ticking approach to compliance or provide opaque information in their filings. Consistent with these, prior studies document that imposing rules without changing managers' disclosure incentives tend to have little effect on improving the quality of the reported financial statements (Ball, Robin and Wu, 2003; Ball and Shivakumar, 2005; Daske et al., 2013; Anantharaman and Chuk, 2017).

Secondly, regulatory requirements apply equally to all firms and do not accommodate differences across firms in their costs of providing such information or in the demand for such information from their stakeholders. This homogenous treatment leads the disclosure requirements to be standardized across all affected firms, causing the disclosures to be overly costly in some cases (i.e., when stakeholders have little demand for such information) and to be insufficient in others (i.e., when stakeholders' demand for information is greater than that mandated).

Thirdly, regulations are slow to adapt to changes in users' requirements or disclosure costs over time. Consistent with these concerns, Leuz and Wysocki (2008) point out that

[12] Leuz and Wysocki (2008) review the disclosure regulations literature, highlighting the firm-specific and market-wide costs and benefits of these regulations. Some studies (e.g., Ball, Jayaraman and Shivakumar, 2012) also examine the complementarity between mandated reporting and voluntary disclosures.

regulators generally find it difficult "to determine the socially optimal levels of disclosure and whether markets produce too little or too much information."

Lastly, effectiveness of mandatory regulations is also affected by the quality of its enforcement. Christensen et al. (2013) point out that mandatory regulations without supportive enforcement yield little benefits to firms or investors. They show that improvements to stock market liquidity from adopting International Financial Reporting Standards are observed only in five European countries that concurrently changed their enforcement of the accounting standards. Even when regulations are supported by enforcement, the extent of the enforcement itself will vary depending on the regulators' resource constraints and pressures from special-interest groups and politicians (Correia, 2014, and Kedia and Rajgopal, 2011).

Consistent with these limitations of mandatory regulations, many recent empirical studies provide evidence of non-compliance with disclosure regulations. Ettredge et al. (2011) document that firms often do not comply with required disclosures on the termination of an auditor (item 4 of 8-K filing). Ellis et al. (2012) show that many firms choose not to fully disclose major customer information, although this is required under Regulation S-K. Bhattacharya et al. (2020) observe that only 49% of derivatives users fully comply with mandatory derivative disclosure rules (SFAS 161) and that the prime reasons for non-compliance are high proprietary costs and agency costs.

2.2. Indirect Regulation of Disclosures

We offer that the indirect regulation of disclosures can act as a useful complementary mechanism to mandated disclosure regulations.[13] Under this indirect approach, firms are required to submit proposals on certain corporate decisions for voting by a large number of external stakeholders.[14] The types of corporate decisions to be voted upon under this approach are those that have a significant cost associated with a dissent vote for the firm and its managers, such as the manager having to accept second-best solutions, giving up value-enhancing activities, not being able to undertake their "pet" projects and so on.[15]

When dissent votes are costly, stakeholder voting puts pressure on the firm's management (or its board of directors) to provide the stakeholders with the necessary information to understand the proposal and vote in its favor. By imposing a cost through dissent

[13] While the indirect regulatory approach may also be effective as a standalone regulatory mechanism, our study is focused only on its role as a complement to mandatory disclosure regulations, i.e., its ability to enhance disclosures beyond those achieved through direct disclosure mandates alone.

[14] If the stakeholder voting involves only insiders or a relatively small number of investors, then firms can privately share all relevant information with the voters, without the need for any public disclosures.

[15] The outcomes of stakeholder votes should also have consequences for the stakeholders in order for them to take the voting seriously.

voting, the indirect regulatory approach shifts the cost-benefit tradeoff on firms' disclosure towards the provision of more information. The better the disclosures for stakeholders to understand and vote in favor of the management's proposal, the lower the likelihood of an adverse voting outcome and its attendant costs. Alternatively viewed, the indirect approach rewards firms for improving their disclosures by increasing their odds of receiving a favorable voting outcome. The better the disclosures, the greater the rewards.[16]

Indirect regulation offers some clear advantages over the direct regulation approach. First, unlike direct disclosure rules that link the penalties for non-disclosure to the disclosed information, the indirect approach links the costs of non-disclosures to the *outcomes* of the disclosed information (viz., stakeholders' voting decisions made using the disclosed information). This creates incentives for firms to go beyond mere compliance with disclosure rules and to instead focus on aiding investors' decision-making.

Secondly, by not prespecifying information that needs to be disclosed, the indirect approach allows firms greater flexibility in their choice of the quantity, quality and method of disclosure. When faced with stakeholder voting, each firm trades off its benefits of disclosures, which arise from a reduced likelihood of rejection of the management's proposal, against its costs of publicly disclosing the information, such as the costs of information production, revelation of propriety information, litigation risks, greater monitoring of managerial activities, reduced perk-consumption, etc. The greater flexibility accorded by the indirect regulatory approach should allow firms to be more cost-effective in their disclosures.

Thirdly, indirect regulation relies less on resource-constrained regulators for enforcement. While direct regulations are mainly enforced by regulators, who impose financial and criminal penalties for insufficient disclosures, indirect regulation works through a stakeholder-enforcement mechanism, where the consequences of an adverse voting outcome are the main penalties imposed on firms for poor disclosures. As the stakeholders stand to gain from right decisions being made on the management proposals, they have one of the strongest incentives to monitor the firm's disclosures and take appropriate actions, including through private litigation against the firm and its management if needed.

[16] Prior studies (e.g., Armstrong, Core and Guay, 2014) show that a firm's information environment and transparency are associated with changes in the firm's corporate governance. This is, however, different to the indirect disclosure regulation, as the disclosure effects of general governance changes are too complex and ex-ante unknown (e.g., Dechow et al., 2010). Also, governance changes may have no effect on public disclosures, if information-sharing associated with these changes occur through private channels. Finally, general governance regulations may not achieve disclosures of a specific type of information, like the ones that are feasible through regulations of specific types of management-proposals.

However, indirect regulation need not always be effective, especially relative to direct disclosure regulations. First, if mandatory or voluntary disclosures are fully effective in making firms reveal all needed information, then stakeholder-voting will achieve little by way of incremental disclosures. Secondly, in the presence of agency problems where management proposals might be sub-optimal, firms may obscure the true rationale underlying their decisions and resist increased demands for information from stakeholders. In these cases, managers may either ignore calls for greater voluntary disclosures, citing proprietary costs or other such reasons for their non-disclosure, or restrict their disclosures to the minimum needed to comply with direct disclosure rules. Lastly, the management proposals to be voted upon should lend themselves to meaningful evaluation by external stakeholders based on the publicly disclosed information. For instance, proposals requiring evaluation of unreliable information or assessment of subjective opinions are unlikely to be effective, as stakeholders would ignore the disclosures associated with such proposals or choose to not vote on such proposals.

3. Say on Pay Voting and Compensation Disclosure Regulations

We evaluate the ability of the indirect regulation approach to generate incremental information over direct disclosure mandates by exploiting the SoP setting. In this section, we first discuss the direct disclosure mandates pertaining to executive remuneration. In the following sub-section, we outline the institutional details of the SoP setting and, in the last sub-section, we discuss its advantages for testing the effect of the indirect regulation mechanism.

3.1. 1992 Disclosure Rules and 2006 Amendment to Regulation S-K

Concerns about excessive executive pays had been raised by market participants and media at least since the 1980s. In response, the SEC announced sweeping disclosure rules in October 1992, with the expectation that these would force companies to better justify their executive remuneration. The new rules required companies to tabulate the major components of compensation for the CEO and other highly paid executives in their annual proxy statements and to also include a report detailing option grants/exercises and the compensation philosophy.

The accounting scandals during early 2000s and the 2005 option backdating scandal pointed to limitations of the 1992 disclosure requirements and led to further calls for regulation of executive compensation, with many attributing the rampant occurrence of accounting irregularities to poorly designed and governed compensation packages (e.g., Burns and Kedia, 2006). In response, the SEC adopted amendments to the disclosure requirements for executive and director compensation (hereafter, Regulation S-K) in August 2006, requiring all public firms to provide more detailed disclosures on executive compensation in the definitive proxy

statements (DEF 14A) prior to their Annual General Meetings (AGMs) of shareholders.[17] The SEC's stated goal in requiring these enhanced disclosures was to improve information provision regarding company compensation policies and procedures, while allowing sufficient flexibility to tailor these disclosures to firm-specific contexts.

Regulation S-K requires firms to provide compensation tables and items, with a separate Compensation Discussion and Analysis (CD&A) section concerning "the material factors underlying compensation policies and decisions". The CD&A provides a narrative description of a firm's compensation philosophy and provides a description and analysis of all material elements of the company's compensation goals, practices, and decisions for the CEO, CFO, three other highest-paid executive officers, and the directors. This section must disclose specific quantitative or qualitative performance targets used to determine bonus payouts, articulate the rationale for using these measures and provide sufficiently precise explanations for the differences in compensation decisions across the named individuals. However, recognizing that disclosures of managerial performance metrics could be costly, the regulation also allows firms to exclude any "specific quantitative or qualitative performance-related factors" whose revelation would cause competitive harm by revealing trade secrets or confidential commercial or financial information.

Robinson, Xue and Yu (2011) study firms that were identified by SEC as being non-compliant with Regulation S-K in the first year in which the Regulation was enforced (i.e., 2007). They find that the extent of noncompliance with compensation-related disclosure regulations is increasing in abnormal levels of CEO compensation and negative media attention but is unrelated to proprietary costs and that SEC enforcement actions eliminate subsequent violations.[18] Ferri, Zheng, and Zou (2018) show that the disclosures made under Regulation S-K have helped to lower investors' uncertainty about managers' reporting objectives.

3.2. 2011 SoP Voting Mandate

To address persisting concerns over executive pay levels and compensation structures, the SEC enacted regulations in January 2011 that allow shareholders greater oversight of compensation decisions. The SEC added Section 14A to the Securities Exchange Act of 1934, which requires public companies to conduct a separate shareholder advisory vote (popularly known as the SoP vote) to approve the compensation of executives. This new rule requires that firms hold a SoP vote at least once every three years during their AGMs, and that the results of

[17] Item 402 of Regulation S-K.
[18] Robinson et al. (2011) measure abnormal compensation using the Core, Guay and Larcker (2008) model for expected compensation.

the SoP vote must be publicly announced (via form 8-K filing) within four business days after the AGM. Section 14A also points to the detailed executive compensation-related disclosures required as per the earlier-enacted Regulation S-K, thereby aligning the objectives of the two regulations.

The key idea behind the SoP voting requirement is that when sufficient numbers of shareholders disagree with the executive compensation program disclosed in the firm's proxy filings, and therefore cast a non-binding "Against" vote, the firm will potentially take actions to improve its compensation program or to better substantiate its compensation decisions to the investors.[19] Section 14A shifts the onus onto the boards of directors to more clearly defend their compensation practices, including the pay-for-performance link in the executives' compensation contracts.

The overall effectiveness of SoP rules in curtailing compensation levels and their effect on firm values are still unclear. Using cross-country data, Correa and Lel (2016) document lower growth rates for CEO compensation in countries adopting SoP laws. However, comparing CEO pay in US firms affected by SoP laws with those in exempt firms, Iliev and Vitanova (2019) document that the SoP regulation increased the level of CEO pay and the fraction of performance-linked pay. Also, Cunat, Gine and Guadalupe (2016) find that SoP voting increases efficiency and market value of firms, but Cai and Walkling (2011) conclude that SoP voting creates value for companies with inefficient compensation and weaker corporate governance but destroys value for others.

Although SoP voting is non-binding in the US, which potentially explains why SoP rules have not lowered compensation levels, the regulation nonetheless increases the scrutiny of executive compensation practices by shareholders, the press, and regulators, among others. A SoP vote disapproval would lead management to face political costs, including reputational penalties, negative public opinion, media backlash, shareholder pressure or labor market effects for directors (Brunarski, Campbell, Harman and Thompson, 2016; Ferri and Maber, 2013, and Murphy and Jensen, 2018). Katz and McIntosh (2013) also point out that SoP voting engenders nuisance litigation from aggressive plaintiffs' lawyers.

Consistent with SoP dissent votes being detrimental to firms' valuations, there is evidence that managers take costly actions to mitigate shareholder dissent. Ertimur, Ferri and

[19] For example, former SEC Chairman Mary Schapiro commented that "In the years leading up to Dodd-Frank, there was a feeling that the conversation between shareholders and boards regarding executive compensation was unsatisfactory. We heard complaints that the compensation disclosures provided were too dense to penetrate, too complex to analyze and too obtuse to persuade" (Chairman's remarks at the Transatlantic Corporate Governance Dialogue, December 15, 2011, at http://www.sec.gov/news/speech/2011/spch121511mls.htm).

Oesch (2013) and Cotter, Palmiter and Thomas (2013) document that the SoP mandate induced managers to engage more with their shareholders as well as with proxy advisory firms on whom institutional investors rely for voting recommendations. Larcker, McCall and Ormazabal (2015) show that the introduction of SoP voting caused several firms to make sub-optimal revisions to their compensation programs in order to obtain positive recommendations from proxy advisor firms.[20] Also, examining firms that failed SoP votes, Lo, Yang, and Zhang (2014) find that firms amend their future compensation policies to reduce shareholder opposition, but do not find any evidence of improvements in their future CD&A disclosures, as measured by the Gunning (1952) Fog Index.[21]

3.3. Why SoP voting?

The SoP setting offers many advantages to test the indirect regulation of disclosure mechanism. First, as early as five years prior to the introduction of the SoP requirements, the SEC had imposed detailed disclosure requirements with respect to executive compensation and the SoP rule did not materially alter these.[22] Since the firms had already been mandatorily disclosing information, especially on KPIs, before the SoP adoption, subsequent disclosure changes of KPIs can be causally attributed to the incentives created by the SoP mandate. These changes also isolate the incremental disclosure effects of the SoP rule, i.e., the effects above and beyond those associated with direct disclosure regulations.

Secondly, as discussed earlier, SoP dissent votes are costly for firms. But at the same time, compensation-related disclosures are also costly, as optimal compensation packages require executive remuneration to be closely tied to a firm's proprietary strategies and key performance targets, revelation of which could hurt firms' commercial interests and lead to excessive scrutiny of managerial actions. Also, more revelation of information can attract unwarranted litigation against a firm and its board of directors (Katz and McIntosh, 2013) or generate populist revolts and media backlashes against executive pay levels (Murphy and

[20] Similarly, empirical research conducted in the context of U.K., where SoP was introduced in 2002, also finds mixed evidence. Cavanagh and Sadler (2009) find limited evidence that SoP materially altered the subsequent level and design of CEO compensation in the U.K. In contrast, Ferri and Maber (2013) find that markets responded positively for firms with weak penalties for poor performance on the announcement of SoP regulation in the U.K. They also find that firms that receive a negative SoP vote respond by removing controversial CEO pay practices and increasing the sensitivity of CEO pay to poor performance.

[21] The Fog Index is computed using the proportion of complex words in a report. Loughran and McDonald (2014) claim that the Fog Index is poorly specified because business documents generally use many words with more than three syllables, which are typically classified as complex words in calculating the Fog Index.

[22] The SoP-related regulation required additional disclosures only in extraordinary circumstances where the golden parachute payments at the time of mergers or takeovers are involved.

Jensen, 2018). Thus, disclosure decisions on executive remuneration involve important cost-benefit trade-offs for firms and are likely to be responsive to shifts in these costs and benefits.

Thirdly, the SoP rule affects firms differently, with the expected costs from dissent voting being greater for firms with seemingly excessive pay. This cross-sectional variation allows us to causally link the observed disclosure changes following the SoP mandate with the incentives induced by the SoP rule.

Fourthly, unlike shareholder voting on share issuances, takeovers, shareholder activism and the like, SoP votes are non-binding in nature and are held periodically by all firms. These help to mitigate selection bias concerns and improve empirical identification.

Finally, since performance metrics used in compensation contracts are key inputs in the SoP voting decisions (Larcker and Tayan, 2015), it is possible to identify and develop a relatively standardized set of disclosures that are comparable over time and across firms. This is harder in the case of most other types of management proposals.[23]

4. Hypothesis Development

Optimal compensation packages require executive remuneration to be closely tied to a firm's proprietary strategies and key performance targets, including non-financial measures. Ironically, closer the link between compensation rewards and firms' proprietary strategies, higher are the costs of disclosing all relevant information about the compensation contracts. This heightens the information asymmetry between management and outsiders about reasonableness of executive pay packages, making even optimal compensation packages to appear unreasonable to them. Shareholders and proxy advisors may then question whether the pay awarded appropriately matches managerial performance.

This issue takes greater prominence when compensation plans are closely scrutinized by shareholders. Since the introduction of SoP rules, shareholders have a more direct and visible channel to express their approval or disapproval of the compensation awarded to the senior management team. Given the reputational and litigation costs of adverse voting outcomes, managers are likely to preempt dissent voting by modifying compensation contracts and better explaining compensation packages in the post-SoP period.

Although firms had strong incentives to provide good compensation disclosures prior to the SoP rule adoption (viz., to comply with Regulation S-K and increase likelihood of

[23] For instance, as pointed out by Babenko et al. (2018), management proposals on corporate strategy vary in their topics from restructuring, asset sales/purchases, spinoffs and ESG-related issues. Proposals on governance vary from changes to anti-takeover provisions to changes in the size of the board, or proxy access.

director reappointments), there are reasons to expect that these incentives increased afterwards. In the post-SoP period, firms need to balance the costs of compensation-related disclosures against, not only the benefits of complying with Regulation S-K or obtaining director reappointments, but also the benefits of obtaining an SoP approval. If firms believe that the additional benefits of obtaining SoP approval outweigh the disclosure costs, then they may be more willing to provide additional narrative or textual disclosures about the underlying rationale for the compensation awarded and discuss in greater detail the financial and non-financial key performance measures applied. Such disclosure changes can either occur by themselves or be accompanied by real changes in the underlying compensation package.

The disclosure incentives created by the SoP rules are likely to vary depending on shareholders' demand for the additional information. Firms with seemingly excessive compensation, i.e., firms whose compensation packages are larger than expected based on the disclosed performance metrics, are likely to be the ones where shareholders need more explanations for the compensation awarded. In the absence of better justification, these firms face a greater likelihood of SoP dissent outcome and stand to benefit more from providing additional information that can help shareholders better understand the benefits of the executive compensation package.

However, in spite of the above SoP-induced incentives to improve disclosures, it is possible that firms do not change their disclosure policy in the post-SoP period. First, if firms were already disclosing all relevant metrics and fully explaining the economic reasonings behind their compensation packages in the pre-SoP period, then no further disclosure changes would occur upon the SoP-rule adoption. Secondly, the benefits of obtaining an SoP approval may not be sufficient to outweigh the costs of additional disclosures. Thirdly, managers may believe that shareholders vote apathetically ignoring the information provided to them, such as might occur on account of the classic free-rider problem. Consistent with this view, Ben-Shahar and Schneider (2014, p. 55) observe: "At the heart of disclosure's failure is that people want and use it too little. Studies numerously testify that people don't notice disclosures, don't read them if they see them, can't understand them if they try to read them, and can't use them if they read them." Also, critics of compensation regulations contend that myopic shareholders often vote without a proper understanding of the labor-market demands or by apathetically relying on proxy advisors' box-ticking exercises (e.g., Bainbridge, 2009). Jamie Dimon, CEO of JP Morgan, exudes such a view by pointing out that shareholders' reliance on proxy advisors

has made them "lazy" and "irresponsible".[24] Gerner-Beuerle and Kirchmaier (2018) also document that shareholders in the UK guide their SoP votes by top-line salary figures and proxy advisors' recommendations, without properly assessing the structure of a company's remuneration policy.

The above arguments lead us to our first hypothesis, which, stated in the alternative form, is as follows:

H1: Firms with seemingly excessive pay packages provide greater compensation-relevant disclosures in proxy materials following the SoP mandate.

If, as discussed above, firms respond to incentives created by SoP voting with improved disclosures, then such an improvement should be observed following a change in firms' likelihood of SoP dissent votes. One such shift occurs when a firm receives an 'Against' recommendation from the ISS, as its recommendations are known to have significant impact on SoP voting outcomes. Malenko and Shen (2016) estimate that a negative ISS recommendation decreases SoP voting support by 25 percentage points. Furthermore, Ertimur, Ferri, and Oesch (2013) show that stock prices react significantly to surprises in ISS recommendations, but not to recommendations from other proxy advisors. To improve their odds of securing an approval vote, boards receiving an ISS 'Against' recommendation might reveal supplementary information through addendums to their proxy statements (DEFA 14A).[25]

Even though the management's incentives are to selectively reveal information that shed favorable light on the firm's executive compensation, the Dye (1985) and Verrecchia (1983) models analytically show that such selective disclosures can still be credible and useful to investors. Therefore, if investors use the information disclosed in the proxy addendums to shape their voting decisions, then we expect these additional disclosures to be significantly positively related to the SoP voting outcomes.

[24] Dimon hits out at 'lazy' shareholders", Financial Times, May 27, 2015.

[25] ISS provides a draft report to firms with its SoP recommendations two to four weeks before their AGMs on a "best efforts" basis, and it *may* revise its recommendations under certain circumstances. Our analyses use only the final ISS recommendations, which could reduce the power of our tests if the KPI disclosures in the additional proxy materials cause ISS to change its recommendation from "Against" to "For" based on such filings. Hence, our analyses consist of the sub-sample of firms that face ISS "Against" recommendations and file additional materials, which the ISS deems insufficient to merit a revision in its recommendation. If shareholders too perceive these additional materials as insufficient to alter their views on the SoP proposals, then our tests should be biased against finding an effect of the additional disclosures on SoP voting outcomes.

However, no disclosure responses from managers are expected if they believe that the SoP approval votes are not sufficiently beneficial to warrant increased disclosures.

These arguments yield our second set of testable predictions, which when stated in the alternative form are as follows:

H2(a): Firms receiving ISS "Against" recommendations are more likely to file additional proxy materials and to disclose more compensation-relevant information in these additional filings compared to firms receiving ISS "For" recommendations.
H2(b): Compensation-relevant information in the additional proxy materials filed by firms receiving ISS "Against" recommendations have incremental effect on SoP voting outcomes, beyond the effect of the information in the original proxy statements.

If firms' disclosures are influenced by incentives created by the SoP voting outcomes, then we should observe changes in disclosure patterns following increases in the costs of an adverse SoP outcome. We predict that such a change occurs following a negative SoP voting outcome. SoP failure in one period increases the reputational penalties associated with failures at the next period's vote. Repeat failures are perceived as indicative of a management that ignores shareholders' views, attracting even more negative press coverage than that after a first-time dissent vote.[26] Also, the greater media visibility arising out of the initial SoP failure attracts more attention from shareholders and proxy advisors to the firms' subsequent SoP proposals (Hauder, 2014). If the costs of adverse SoP votes affect disclosure incentives, then we predict failed SoP firms to increase their disclosures at the subsequent SoP vote and for these additional disclosures to be associated with more favorable SoP voting outcome in the next period.

These arguments lead to our final set of hypotheses, which when stated in the alternative form are as follows:

H3(a): Firms that fail to receive shareholders' approval on the SoP vote provide greater compensation-related disclosures next period.
H3(b): Firms that provide greater disclosures in response to a negative SoP vote have a higher probability of a favorable SoP vote next period.

[26] See for example, 'RadioShack, Nabors Stick With CEO Pay Despite Shareholder Objections', Wall Street Journal, April 25, 2014.

5. Variable Measurement and Research Design

4.1 Measuring Compensation-relevant Disclosures

Testing our hypotheses requires measures of the compensation-related disclosures that are relevant to investors for their SoP voting decisions. Performance metrics play a key role in investors' understanding of the appropriateness of executive remuneration, as these metrics help to identify potential pay-performance misalignments and to uncover the mitigating factors for seemingly excessive pay. Accordingly, we focus on the disclosures of KPIs in the proxy materials filed with the SEC. The importance of these disclosures is highlighted by the fact that Regulation S-K specifically requires firms to disclose the items of corporate performance that are employed in compensation decisions and ISS places these at the top of its list of criteria for evaluating whether a firm's compensation disclosures are complete and clearly understanable.[27] Moreover, Larcker and Tayan (2015) find that 62% of the institutional investors they surveyed rely on performance metrics for their SoP voting decisions. Ferri, Zheng and Zhou (2018) also point out to the importance of performance metric disclosures for investors to unravel managerial incentives. An added advantage of focusing on the performance metrics is that the 2011 SoP regulation does not impose any additional disclosure requirements for KPIs, implying that any post-SoP changes in their disclosure are not the outcome of any direct disclosure mandate.

Both financial and non-financial performance metrics are relevant for assessing executive pay, as optimal contracts should include both of these types of metrics (Ederhof, 2010 and Hayes and Schaefer, 2000). However, financial data are ubiquitous and are reported in a variety of contexts, including settings unrelated to compensation, which makes it tenuous to isolate their disclosure effects on SoP voting. We therefore restrict our main focus to only disclosures of non-financial KPIs, although for completeness we also report robustness of our conclusions to using both financial and non-financial KPIs. Additionally, to identify the effects of non-financial KPIs disclosed specifically in the proxy statements, our analyses control for KPI disclosures made in other regulatory filings.

Proxy materials provide discussions on a variety of topics related to the non-financial KPIs in compensation plans. These discussions are highly unstructured, making it hard to compare these across companies or over time. Therefore, to obtain a standardized measure of the KPI disclosures, we parse through all of the definitive proxy statements and additional

[27] See https://www.issgovernance.com/file/policy/us-executive-compensation-policies-faq-16-march-2016.pdf

proxy materials filed since January 2007 (i.e., after the SEC adopted Regulation S-K), and identify discussions of KPIs by matching words in the filings to those in a pre-selected dictionary, viz. the dictionary of non-financial KPI metrics derived from the balanced scorecard framework. Reliance on the balanced scorecard obviates the need for an ad-hoc word list for those KPIs that are relevant to compensation.[28] Also, the balanced scorecard framework is applicable to all firms, which makes cross-firm comparisons of KPI disclosures feasible.

First, using the balanced scorecard framework, we create a list of KPIs that reflect major performance metrics along a variety of dimensions (see Appendix A). As a result, the power of our tests depends on the extent to which this KPI list adequately captures all of the relevant performance indicators used by firms in compensation contracts.[29] Next, we create a measure of KPI disclosures by counting the total number of times that KPIs from the balanced-scorecard-based list are used in each individual filing (e.g., form DEF 14A or DEFA 14A). We aggregate this measure across all of the firm's proxy filings (i.e., the definitive proxy statement and all of the subsequent additional proxy materials leading up to an AGM), and arrive at a composite annual measure for KPI disclosure.[30] This measure gives a cumulative score of all the KPI disclosures that a firm provides to its shareholders for consideration at the AGM. Additionally, to ensure that our measure is comparable across firms and to account for the effects of firm size or complexity on KPI disclosure, we scale the cumulative score by the total number of words (in thousands) in all of the proxy materials.

Although straightforward, this scoring method simultaneously captures the breadth (i.e., the number of unique KPIs), the depth (i.e., the extent of details presented on each KPI), and the granularity (i.e., the level of disaggregation across named executives) of the KPI disclosures. Discussing a larger number of unique KPIs should help investors to better understand a firm's performance in terms of various dimensions and perspectives, such as the perspectives of customers, employees, shareholders, or the dimensions of internal business, innovation and

[28] The balanced scorecard framework provides a particularly potent tool for capturing performance disclosures parsimoniously, as this framework is based on an integrated approach to evaluating managers, and it links their interests with their firms' long-term strategic objectives. This framework also relies on specific descriptions of each firm's business model to appropriately capture its underlying economics and the management's strategy for that firm (Kaplan and Norton, 2000).

[29] Our empirical analyses exclude firms that exclusively use performance metrics from outside the balanced scorecard framework. Also, since our focus is on KPIs, our analyses ignore DEF 14A and DEFA 14A that do not mention any KPIs.

[30] Based on our reading of a sample of definitive additional proxy materials (DEFA 14A), we find that these materials are always incremental to the definitive proxy statements (DEF 14A), and they contain only additional information that has a bearing on the matters to be taken up at the AGM. Firms use these additional proxy filings to provide their shareholders with more information about executive compensation in the context of an upcoming SoP vote, and they are often clarifications provided in response to an adverse recommendation or criticism by a proxy advisory firm such as the ISS.

learning, or the environment and community. A deeper discussion of each unique KPI allows the investors to better understand the justifications for the inclusion of that KPI in the compensation contract. Such discussion clarifies how targets are set for each KPI, the target levels for each KPI, the actuals levels of performance achieved by executives for each KPI, and the ways that these achievements are assessed and translated to executive bonuses and pay. Finally, regarding the granularity of the KPI discussions, some firms provide detailed KPI and performance information for each executive, while others present aggregated and summarized information concerning many executives. More granular presentations allow investors to better link each executive's pay to their performance. A broader, deeper, and more granular presentation naturally translates to a higher value for our KPI measure.

4.2 Research Design and Methodology

4.2.1 Tests of Hypothesis *H1*

To estimate the effect of the adoption of SoP mandate on KPI disclosures, we use a difference-in-differences (DiD) specification with a continuous treatment variable. Specifically, following the SEC Regulation in January 2011, we compare changes in the KPI disclosures of firms that have seemingly excessive pay (treatment firms) to changes in the KPI disclosures of firms that do not have seemingly excessive pay (control firms). Formally, we estimate the following OLS regression specification:

$$KPI\_Disclosure_{it} = \alpha_0 + \alpha_1 Res\_Pay_{it} + \alpha_2 Post \times Res\_Pay_{it} + \Sigma \alpha_k \boldsymbol{CONTROLS}_{it} + \Pi_i + \Gamma_t + \varepsilon_{it} \quad (1)$$

Where $KPI\_Disclosure_{it}$ is the total number of times that KPIs are mentioned in all of the proxy materials provided by firm "*i*" prior to the AGM in year "*t*", scaled by the total number of words (in thousands) in all of the proxy materials.[31] *Post* is a dummy variable that takes the value 1 for the post-SEC Regulation period (i.e., AGMs held after January 2011) and is set to 0 for the pre-SEC regulation period (i.e., AGMs held before January 2011). We drop observations in the 3-months before and after the effective date of the SoP mandate, i.e., January 21, 2011.[32] We proxy for seemingly excessive pay with Res_Pay_{it}, which is the residual pay computed as the difference between the actual pay and the expected pay obtained by applying the Core, Guay and Larcker (2008) approach.[33] The Core et al. (2008) approach,

[31] Results are substantially similar if we do not scale by the number of words in thousands.
[32] Results are robust to including all AGMs in the 3-month window around January 21, 2011.
[33] Our reliance on excessive pay to proxy for investors' demand for information is consistent with the findings of Ertimur, Ferri, and Muslu (2011), who show that, when executive compensation is seemingly excessive, shareholders tend to provide more support to pay-related proposals of activist investors.

described in Appendix B, combines popular financial metrics, such as stock returns, return on assets and sales, with other determinants of executive pay to estimate the expected level of pay for a firm. ***CONTROLS*** is a vector of control variables that are potentially correlated with both KPI disclosures and executive pay. We briefly introduce the control variables here and leave their detailed definitions to Appendix B.

As previous studies show that a firm's information and disclosure environment and its executive compensation are both functions of its size, growth opportunities, performance levels, and volatility (Lang and Lundholm, 1993; Core, Guay, and Larcker, 2008; Core and Guay, 1999 and Core, Guay, and Verrecchia, 2003), we include controls for firm size (*Size*), book-to-market ratio (*BTM*), return on assets (*RoA*), leverage (*Lev*), size-adjusted stock returns (*Ret*) and volatility (*Vol*) over the 12-month period leading to an AGM. We also include stock liquidity (*Turn*) as Jayaraman and Milbourn (2012) find that greater stock liquidity is associated with higher pay-for-performance sensitivity with respect to stock prices, which could induce greater KPI disclosures. To account for the intrinsic difficulty of quantifying performance and firm value for intangible intensive firms, we include a hard-to-value measure of firms (*HTV*), computed as in Barth, Kasznik, and McNichols (2001). Following Ertimur, Ferri, and Oesch (2013), we include the percentages of votes controlled by institutional investors (*InstOship*), and by insiders (*InsiderOship*), as controls for firm ownership characteristics that could affect managers' disclosure decisions.

To isolate the changes in compensation-related disclosures, we also control for other characteristics of textual disclosures that may reflect more general changes in firm disclosure practices. We include the total number of words in thousands (*TWords*) and the Gunning Fog Index (*Fog*) to control for the verbosity and the readability of proxy materials, respectively. To make these measures comparable to *KPI_Disclosure*, we also aggregate these across all filings provided to the shareholders in connection with an upcoming AGM (i.e., the definitive proxy statement and all subsequent proxy materials filed prior to an AGM). To account for a firm's typical disclosure style and choice of words when communicating with its shareholders, we control for the number of words (*Twords_10K)* and the Gunning Fog Index (*Fog_10K*) of its annual report (i.e., the latest form 10-K filed with the SEC prior to an AGM). Lastly, to isolate the incremental information in proxy disclosures over and above any performance metric disclosures in other public filings, we create a measure for KPI disclosures in the firms' annual reports (*KPI_10K*), in a manner analogous to *KPI_Disclosure*, and include *KPI_10K* as a control in the regressions. Finally, our regressions also include firm and year fixed effects, to account for any unobserved firm- and year-specific characteristics. The regressions account for

time-series and cross-sectional correlations in residuals by clustering standard errors at the industry-year level. [34]

If, as predicted by ***H1***, firms with seemingly excessive pay change their disclosure behavior to provide more KPI-related discussions following the SoP mandate, then we expect α_2 to be positive and significant.

4.2.2 Tests of Hypotheses *H2(a)* and *H2(b)*

We first test the prediction from the alternative hypothesis to ***H2(a)***, that firms with an ISS "Against" recommendation have an increased likelihood of filing additional proxy materials (DEFA 14A) by estimating the following conditional logit model:

$$Pr(AddMatl\_Filing)_{it} = \beta_0 + \beta_1 ISS\_Against_{it} + \beta_2 Res\_Pay_{it} + \beta_3 KPI\_DEF14A_{it} + \beta_4 Fog\_DEF14A_{it} + \beta_5 TWords\_DEF14A_{it} + \Sigma \beta_k \boldsymbol{CONTROLS}_{it} + \upsilon_{it} \quad (2)$$

Where *AddMatl_Filing* is an indicator variable that is set to 1 if a firm chooses to file additional proxy materials with the SEC in connection with an upcoming AGM and is set to 0 otherwise. *ISS_Against* is an indicator variable that takes the value of 1 if the ISS recommends that shareholders vote "Against" the SoP proposal and 0 otherwise. To control for the attributes of disclosures provided in the original definitive proxy statement (DEF 14A) filed immediately preceding the additional proxy materials (DEFA 14A), we include our standardized measure of KPI disclosures (*KPI_DEF14A*), the Gunning Fog Index (*Fog_DEF14A*), and the number of words in thousands (*TWords_DEF14A*), all of which are computed for the DEF 14A filings only. We also include other control variables as indicated in Eq. (1) above.

Finally, we control for industry specific characteristics in a given year by estimating conditional logit models grouped by industry and year, which allows us to estimate logit regressions within industry-year groups. Unlike a regular logit regression, a conditional logit regression requires variation within each group, but it avoids the problem of incidental parameters that can result in inconsistent estimates when using a logit model with a fixed effects specification (Greene, 2012, p. 721). Standard errors are also clustered by industry-year, to account for correlations among residuals across firm-year observations. If the probability of filing additional proxy materials is greater after a firm receives an ISS "Against" recommendation, then we expect β_1 to be positive and significant.

[34] We do not use two-way clustered standard errors by industry and by year, as the sample for DiD analysis around the SoP mandate has only nine years of data that would produce to too few year clusters and yield biased estimates (Petersen, 2009). However, results are unchanged if we instead use two-way clustering by industry and by year.

To examine whether firms provide greater compensation-relevant information in their additional proxy materials that are filed in response to an ISS "Against" recommendation, as is also implied by ***H2(a)***, we estimate the following OLS regression specification, using the sub-sample of the firms that filed additional proxy materials:

$$KPI\_AddMatl_{it} = \alpha_0 + \alpha_1\, ISS\_Against_{it} + \alpha_2\, Res\_Pay_{it} + \Sigma\alpha_k\, \boldsymbol{CONTROLS}_{it} + \Lambda_I + \Gamma_t + \varepsilon_{it} \quad (3)$$

Where *KPI_AddMatl* is our standardized measure of KPI disclosures, which is computed in a manner analogous to the computation of *KPI_Disclosure*, but only for the additional proxy materials (DEFA 14A), if any. This regression includes the same control variables as those used in Eq. (1), except that in Eq. (3) the Gunning Fog Index (*Fog_AddMatl*) and the number of words in thousands (*TWords_AddMatl*) are computed only for the additional proxy materials to be consistent with the measurement of the dependent variable. As in Eq. (1), this OLS regression includes industry and year fixed effects, and we cluster standard errors by industry-year.[35] If firms receiving an ISS "Against" recommendation choose to provide greater KPI disclosures in their additional proxy materials, then α_1 would be positive.

To test whether more compensation-relevant disclosures in response to an ISS "Against" recommendation affect the SoP voting outcome, as is predicted by the alternative hypothesis to ***H2(b)***, we estimate the following OLS and conditional logit regression specifications for the sub-sample of firms that choose to file additional proxy materials prior to their SoP votes:

OLS Regressions: $$\%Against_{it} = \beta_0 + \beta_1\, KPI\_AddMatl_{it}\, x\, ISS\_Against_{it} + \beta_2\, KPI\_AddMatl_{it}$$
$$+ \beta_3\, KPI\_DEF14A_{it}\, x\, ISS\_Against_{it} + \beta_4\, KPI\_DEF14A_{it} + \beta_5\, ISS\_Against_{it}$$
$$+ \beta_6\, Res\_Pay_{it} + \Sigma\, \beta_k\, \boldsymbol{CONTROLS}_{it} + \Lambda_I + \Gamma_t + \upsilon_{it} \quad (4)$$

Conditional Logit: $$Pr(Dissent)_{it} = \alpha_0 + \alpha_1\, KPI\_AddMatl_{it}\, x\, ISS\_Against_{it} + \alpha_2\, KPI\_AddMatl_{it}$$
$$+ \alpha_3\, KPI\_DEF14A_{it}\, x\, ISS\_Against_{it} + \alpha_4\, KPI\_DEF14A_{it} + \alpha_5\, ISS\_Against_{it}$$
$$+ \alpha_6\, Res\_Pay_{it} + \Sigma\, \alpha_k\, \boldsymbol{CONTROLS}_{it} + \varepsilon_{it} \quad (5)$$

Where *KPI_DEF14A* and *KPI_AddMatl* are the components of *KPI_Disclosure* as measured from KPI information disclosed only in the original definitive proxy statements (DEF 14A) or only in the additional proxy materials (DEFA 14A), respectively. The sets of controls included in these regressions are identical to those included in Eq. (3) above. As the shareholder reaction to disclosures in additional proxy materials could vary depending on the ISS recommendation, we allow the coefficients on *Fog_AddMatl* and *TWords_AddMatl* to also vary across firms

[35] Results are unchanged if we instead use two-way clustered standard errors by industry and by year.

having ISS "For" and "Against" recommendations. The OLS regression includes industry and year fixed effects, while the conditional logit regression is estimated within industry-year groups. In both regressions, the standard errors are clustered by industry-year.

The main coefficient of interest in the OLS (conditional logit) regression is β_1 (α_1), which captures the incremental effect of KPI disclosures in the additional proxy materials filed by firms receiving an ISS "Against" recommendation, relative to the disclosures in these firms' original definitive proxy statements. If the additional KPI disclosures, provided in response to an ISS "Against" recommendation, aid investors to view SoP proposals more (less) favorably, then β_1 and α_1 should both be significantly negative (positive).

As the additional proxy filings do not change the past year's pay awarded to executives or their corresponding compensation structure, linking the newly issued information in the additional proxy materials to the eventual SoP voting outcomes would cleanly isolate the incremental effects of the *new* disclosures on SoP voting outcomes. Ertimur et al (2013) also confirm that none of the firms that they evaluate, which have an ISS 'Against' recommendation at the SoP voting, change their compensation structure in their response to the recommendation.

4.2.3 Tests of Hypotheses *H3(a)* and *H3(b)*

To test the prediction from ***H3(a)*** that SoP-failed firms would subsequently increase compensation disclosures, we estimate the following OLS regression:

$$\Delta KPI\_Disclosure_{it} = \alpha_0 + \alpha_1\, SoP\ Disapproval_{it-1} + \alpha_2\, \Delta Pay_{it} + \alpha_3\, ISS\_Against_{it}$$
$$+ \Sigma\, \alpha_k\, \Delta Other\ Disclosure\ Measures_{it} + \Sigma\, \beta_k\, \boldsymbol{CONTROLS}_{it} + \Lambda_I + \Gamma_t + \varepsilon_{it} \quad (6)$$

Where $\Delta KPI\_Disclosure_{it}$ represents changes in KPI-related disclosures provided in the proxy materials filed by firm "*i*" prior to its SoP vote in year "*t*", relative to the disclosures provided before the preceding SoP vote. The independent variable of interest, $SoP\ Disapproval_{it-1}$, is either the percentage of votes cast against the previous SoP proposal (*Past %Against*), or an indicator variable (*Past Dissent*) that equals 1 if firm "*i*" has failed to obtain over 70% support in the previous SoP vote and 0 otherwise.[36] As we are interested in examining changes in disclosure behavior, we include year-on-year changes in all of the textual disclosure

[36] In 2011, the ISS indicated that any firm receiving less than 70% of SoP votes would automatically have a higher probability of receiving a negative SoP recommendation in the following year. In addition, Ertimur, Ferri, and Oesch (2013) find that managers' responses to SoP voting decisions are not linear, and that a striking discontinuity is observed in firms' responses to SoP votes at around the point of 70% SoP voting approval. This discontinuity suggests that firms respond very differently in cases where the SoP votes are marginally below the 70% cut-off than in cases that are marginally above that cut-off.

characteristics within the proxy materials (*ΔFog* and *ΔTWords*) and in the annual reports (*ΔKPI_10K*, *ΔTWords_10K*, and *ΔFog_10K*) as the control variables. As the ISS more carefully examines firms that have previously failed SoP votes, we control for the current year's ISS "Against" recommendation. We also control for year-on-year changes in total compensation awarded to the named executives (*ΔPay*).[37] As in Eq. (4), the regressions include industry and year fixed-effects and other control variables. Also, as before, standard errors are clustered by industry-year. We expect α_1 to be significantly positive if SoP disapproval in the prior period "*t-1*" leads to an increase in KPI-related proxy disclosures in the subsequent SoP vote held in period "*t*".

We then investigate whether the enhanced KPI-related disclosures provided by firms that have previously failed SoP votes are effective in reducing the likelihood of a repeat negative SoP vote (i.e., less than 70% voting support). We implement this test by estimating the following conditional logit regression, estimated within industry-year groups:

$$\begin{aligned} Pr(Dissent)_{it} = {} & \alpha_0 + \alpha_1\, Past\ \%Against_{it-1}\ x\ \Delta KPI\_Disclosure_{it} + \alpha_2\, Past\ \%Against_{it-1} \\ & + \alpha_3\, \Delta KPI\_Disclosure_{it} + \alpha_4\, KPI\_Disclosure_{it} + \alpha_5\, \Delta Pay_{it} + \alpha_6\, Res\_Pay_{it} \\ & + \alpha_7\, ISS\_Against_{it} + \Sigma\alpha_k\, \boldsymbol{CONTROLS}_{it} + \varepsilon_{it} \end{aligned} \qquad (7)$$

If, as predicted by hypothesis ***H3(b)***, firms that receive higher levels of shareholder votes against their SoP proposal in the prior year respond by providing more KPI-related disclosures in the current year and that helps them to avoid a repeat SoP disapproval, then we expect α_1 to be significantly negative.

6. Data and Sample Sources

We begin with a sample of all definitive proxy statements (DEF 14A) and all additional proxy materials (DEFA 14A) filed by U.S. listed firms between January 2007 (i.e., after the SEC enacted Regulation S-K in 2006) and December 2016. We use PERL regular expressions to search for and count the occurrences of words and phrases in these filings that match our list of balanced scorecard-based non-financial KPIs (see Appendix A). To accumulate the compensation-related disclosures available to shareholders at the time of an AGM, we collect the AGM dates for all U.S. public firms that were held between 2007 and 2016 from the FactSet SharkRepellent and the ISS Voting Analytics databases. We then delete the AGM dates that

[37] Since *Res_Pay* is computed as the deviation of actual from expected pay, as estimated by using annual regressions, following Core et al. (2008), this variable is not strictly comparable over two consecutive years (i.e., *t* and *t-1*) for the same firm. Hence, we do not include *ΔRes_Pay* in this regression specification. However, our results are qualitatively similar if we replace *ΔPay* with *ΔRes_Pay* in Eq. (6).

occur within 30 days of the previous AGM, or more than 13 months after an AGM, to ensure that we categorically match compensation-related disclosures to the relevant AGMs. For each AGM, we compute the *KPI_Disclosure* measure by aggregating the KPI disclosures in all the proxy statements and additional proxy materials filed with the SEC just prior to that AGM.

We obtain data on total compensation paid to the named executives, as reported in the definitive proxy statements, from S&P's Capital IQ database and augment it with data from ExecuComp. The fundamental data and the capital market data are obtained from Compustat and CRSP, respectively. To compute measures for verbosity and readability, we obtain word count and complex word count from the SEC Readability and Sentiment dataset of the WRDS SEC Analytics Suite. The institutional ownership and executives' shareholding data are from the Thomson Reuters S-34 dataset and ExecuComp, respectively. We collect the SoP voting data for mandatory SoP votes held by the Russell 3000 index firms between January 2011 and December 2016 (i.e., after the SoP vote was required), and the ISS voting recommendations from the ISS Voting Analytics database. Our final SoP dataset consists of 7,423 management-proposed advisory votes on executive compensation over the January 2011 to December 2016 period before imposing data availability requirements for the control variables.[38]

Panel A of Table 1 presents the descriptive statistics for the main variables.[39] The median for *KPI_Disclosure* is 3.04 and that for *TWords* is 28.30, which implies that key performance metrics are mentioned about three times for every thousand words in the proxy materials and that the median firm has 28,300 words in its proxy materials, with 86 total mentions of KPIs. The proxy materials also have a median Gunning Fog Index (*Fog*) of 21.04, indicating the complexity of proxy disclosures.[40] The median firm has a market capitalization of US$2bn (=$e^{14.46}$), and it awards a total of US$11mn (=$e^{9.31}$) to its named executive officers. Finally, our sample has 557 firm-year observations with SoP dissent votes (i.e., *%Against* >= 30%), 790 instances of ISS "Against" recommendations, and, on average, 8.7% of shareholder votes are cast against the SoP proposal.

Table 1, Panel B, presents the Pearson and Spearman rank correlations among the main variables of interest. *KPI_Disclosure* is positively correlated with the compensation measures (*Pay* and *Res_Pay*), consistent with higher-paying firms providing more details to justify their payments. In addition, *Res_Pay* is positively and significantly correlated with *%Against*,

[38] For firms that selected a biennial or triennial frequency of mandatory SoP voting, we take care to capture only those KPI disclosures that were provided prior to those AGMs that held such SoP votes.
[39] We winsorize all continuous variables (except stock returns) at the 1% and 99% levels to account for outliers.
[40] A Gunning Fog Index of over 18 typically means that the text is "unreadable" (Li, 2008).

Dissent, and *ISS_Against*, indicating that shareholders and the ISS express dissatisfaction with seemingly excessive compensation. The levels of complexity in proxy materials, as measured by the Gunning Fog Index (*Fog*), are negatively correlated with the discussions of performance metrics (*KPI_Disclosure*), implying that *KPI_Disclosure* and *Fog* capture different attributes of the proxy disclosures.

7. Empirical Results

6.1 Effect of SoP Mandate on KPI-related Proxy Disclosures

The results from estimating Eq. (1) to test for hypothesis ***H1*** are presented in Table 2. Interestingly, in the pre-SoP period, the relation between KPI disclosures and residual pay is insignificant, as indicated by the coefficient on Res_Pay_{it}. This suggests that firms with seemingly excessive pay and so, facing greater demand for information from their investors, did not respond by supplying more KPI disclosures, on average, and shows that mandated disclosure rules are not always sufficient to entice firms to adjust their disclosure decisions to investors' demand for information. However, after the adoption of the SoP mandate in 2011, these firms have started providing more KPI disclosures as seen by the positive and statistically significant coefficient on $Post\ x\ Res\_Pay_{it}$. In Column (4), we compare firms in the top and bottom terciles of *Res_Pay* by replacing *Res_Pay* with an indicator variable that is set to 1 for top tercile firms and is set to 0 for bottom tercile firms. The coefficient on $Post\ x\ Res\_Pay_{it}$ in Column (4) indicates that, following the 2011 SoP mandate, KPI-related disclosures by firms in the top tercile of *Res_Pay* exceeded bottom tercile firms' KPI disclosures by 0.143 for every thousand words in proxy materials, i.e., around 5 (= 0.143x32.63) more KPI-related disclosures. These findings support hypothesis ***H1*** and indicate that the adoption of the SoP rule causes firms that are likely to have the greatest demand for additional information to disclose more. This increased disclosure is incremental to a firm's actions undertaken under mandatory disclosure rules and indicates that indirect regulation of disclosures, such as the SoP mandate, can incrementally boost disclosures, especially when investors' need for information is greater.

In terms of the control variables, we observe that firms with less readable proxy materials (i.e., those with higher Gunning Fog Index) tend to provide fewer KPI disclosures, suggesting that our measure of KPI disclosures differs from measures of general textual characteristics of disclosures in proxy materials. Further, in the pre-SoP period, firms were more inclined to provide KPI disclosures in the proxy statements if they were also disclosed in the annual report (10-K) and were less inclined to do so if they had more verbose or lengthy proxy materials. However, both of these relationships have reversed in the post-SoP period,

with more verbose proxy materials containing more KPI disclosures and annual reports containing fewer KPI disclosures. Lastly, we find that larger firms, which are likely to be more complicated and hence rely on larger number of KPIs for evaluating their senior management, tend to disclose disproportionately more KPIs. All other control variables have insignificant coefficients.

Although our main focus is on non-financial KPI disclosures in the proxy statements, for completeness, we also report results when non-financial KPI is replaced by financial KPIs as the dependent variable. The coefficient on *Post x Res_Pay*$_{it}$ in Column (5) is a significant 0.072 (t-statistic=3.47), indicating that the SoP rules have encouraged firms to increase disclosures of both non-financial and financial KPIs in their compensation discussion and analysis.

To confirm that the observed results are indeed attributable to the 2011 SoP mandate and to study the persistence of this effect, we next examine the timing of changes in KPI-related proxy disclosures around the SoP mandate by firms with seemingly excessive executive pay (i.e., treatment firms) relative to those without excessive pay (i.e., control firms). This analysis allows us to test the parallel trends assumption for the treatment and control firms in the difference-in-differences analysis. We implement the parallel trends analysis by replacing the indicator variable *Post* in Eq.(1) with a series of indicator variables for AGMs held in each of the three years before (i.e., *Pre3*, *Pre2* and *Pre1* for 2008, 2009 and 2010, respectively) and four years after the SoP mandate (i.e., *Post1*, *Post2*, *Post3* and *Post4* for 2011, 2012, 2013 and 2014, respectively). If we observe a sharp increase in KPI disclosures in the post period (2011-2014) but not in the pre period (2008-2010), it will help to rule out the possibility that other concurrent events around the SoP mandate drive the observed changes in disclosure behavior.

Next, we re-estimate this modified version of the OLS regression specification in Eq.(1) with the indicator variable for 2008 (i.e., *Pre3*) omitted, so that the year 2008 serves as the benchmark year and the coefficients for *Pre3* are set to zero by construction. The results, reported in Table 3, indicate that both *Pre1 x Res_Pay* and *Pre2 x Res_Pay* are statistically insignificant in all of the regression specifications, with or without the control variables. In contrast, almost all of the coefficients on the variables *Post1* through *Post4* interacted with *Res_Pay* in Columns (4)-(6) are positive and statistically significant and their coefficients are fairly stable in magnitude around 0.20. These findings confirm that the observed KPI disclosure effects of the SoP mandate are persistent and are specifically attributable to its adoption.

We find qualitatively similar results in column (7) when we consider financial KPI disclosures. While it is reassuring that firms respond to SoP rule adoption by increasing their

disclosures of both financial and non-financial KPIs, financial disclosures are much less costly for firms, due to their ubiquitous nature and their availability in financial statements and stock price data. These make it tenuous to isolate the effects of financial disclosures on SoP voting outcomes. Hence, our subsequent analyses focus only on non-financial KPI disclosures.

While the above results indicate that the SoP mandate led to an increase in KPI-related disclosures in proxy materials by firms with excessive executive compensation, it is possible that these are driven by omitted correlated factors that affect such firms' overall disclosure behavior, i.e., irrespective of investors' demand for SoP voting-related information. To assess this possibility, we next conduct a placebo test and examine changes in KPI-related disclosures in the annual report (10-K), as opposed to the proxy materials, around the SoP mandate. We re-estimate Eq. (1) with *KPI_10K* as the dependent variable and *KPI_Disclosure* as a control variable. If the changes in KPI disclosures are unrelated to the SoP mandate, such changes are likely to also occur outside the proxy statements and in particular, in the firms' 10-Ks, which are the most widely disseminated and followed reports provided by the firm. The results presented in Table 4 show that *Post x Res_Pay* is statistically insignificant in all of the regression specifications in Columns (1)-(3), which contrasts with the earlier results for KPI metrics disclosed in the proxy materials. These findings further corroborate the claim that the observed disclosure changes are motivated by a managerial desire to improve SoP voting outcomes, especially when their executive compensation is deemed excessive and there is a greater shareholder demand for KPI-related information.

6.2 Role of Additional Proxy Materials When the ISS Recommends "Against"

Table 5 presents results from the tests of prediction ***H2(a)*** that firms receiving an ISS "Against" recommendation are more likely to file additional proxy materials and disclose more compensation-relevant information in these additional filings compared to firms receiving ISS "For" recommendations. The results from estimating Eq. (2) are presented in Columns (1) and (2) of Table 5. These show that the coefficient on *ISS_Against* is a statistically significant 1.4, which indicates that firms receiving an ISS "Against" recommendation are up to 20% more likely to file additional proxy materials. These results remain after controlling for firms' disclosure attributes, as reflected in their originally filed definitive proxy statements or their 10-Ks. This finding is also borne out in anecdotal evidence, as we find several instances of

firms filing a DEFA 14A that explicitly references the ISS "Against" recommendation (e.g., Hewlett-Packard Co. in 2011, or Alleghany Corp. and Broadcom Corp. in 2014).[41]

Next, we estimate Eq. (3) to examine whether firms that receive an ISS "Against" recommendation provide more KPI-related disclosures through their additional proxy materials (*KPI_AddMatl*). Columns (3) and (4) of Table 4 reveal that the coefficient on *ISS_Against* is a statistically significant 0.16 to 0.18, indicating that an ISS "Against" recommendation encourages firms to increase their KPI disclosures by 1.5 to 2.0 times the median disclosure in additional materials (*KPI_AddMatl)* or by 5% to 6% of the median disclosure in all proxy materials (*KPI_Disclosure*). This finding is robust to controls for other characteristics of disclosures in the additional proxy materials, the definitive proxy statements, and the annual reports. These results support hypothesis ***H2(a)***.

We next examine hypothesis ***H2(b)***, and test whether the KPI metrics that are disclosed in additional proxy filings by firms with ISS "Against" recommendations help their investors to better assess the compensation contracts, as reflected in their SoP voting outcomes. Table 6 presents the results of estimating Eqs. (4) and (5). For firms that file additional proxy materials, their KPI disclosures in the earlier-filed definitive proxy statements (*KPI_DEF14A* and *KPI_DEF14A x ISS_Against*) are statistically insignificant, which could either reflect the irrelevance of proxy statement KPI disclosures for SoP voting among these firms, or indicate a lack of power in the tests. However, more importantly, the interactive variable *KPI_AddlMatl x ISS_Against* has a negative and statistically significantly coefficient, which implies that the KPI disclosures provided in additional proxy materials by firms receiving an ISS "Against" recommendation are useful to shareholders.[42] This finding indicates that the extra KPI disclosures in the additional materials aid shareholders of firms receiving an ISS "Against" recommendation to better understand the optimal nature of compensation contracts and makes them more likely to vote in favor of the SoP proposal. We obtain similar conclusions from the conditional logit regression on the probability of a dissent outcome.

Overall, the results in Tables 5 and 6 reject the null hypotheses ***H2(a)*** and ***H2(b)*** in favor of the alternative, that firms receiving an ISS "Against" recommendation are more likely to file additional proxy materials, disclose more KPI-related information in these materials and

[41] Ertimur et al. (2013) examine whether the act of filing an amendment to proxy statements affects SoP voting outcome and find that this is not the case. However, unlike the current analysis, they do not examine whether the information contained within these amendments, especially KPI disclosures, matter for SoP voting outcomes.

[42] The *p*-values from an F-test of whether the sum of the coefficients on *KPI_AddlMatl + KPI_AddlMatl x ISS_Against* is equal to *KPI_DEF14A + KPI_DEF14A x ISS_Against* are 0.03 for the OLS regression, and 0.61 for the conditional logit regression.

the additional KPI disclosures increase the odds of the shareholders voting in favor of the SoP proposals. These findings provide a relatively clean identification for the *new* information in KPI disclosures made in the additional proxy filings, as these additional filings do not change the executives' pay for the past year or their underlying compensation structure. Moreover, our findings are unique to the KPI disclosures provided in the additional filings, which raises the bar for endogeneity-based explanations, as these explanations need to also clarify why the unobserved determinants of SoP are correlated with *KPI_AddMatl*, but not with KPI disclosures in the original definitive proxy statements, or those made in the 10-Ks.

6.3 Changes to compensation-related disclosures by failed SoP firms

To provide corroborative evidence on firms' disclosure responses to SoP voting and the usefulness of increased KPI disclosures to investors, we examine how firms' disclosures and investors' voting behavior change following a failed SoP vote. As predicted by hypothesis ***H3(a)***, if KPI-related disclosures are useful to investors in assessing firms' compensation packages and if boards believe their compensation contracts to be shareholder friendly, then firms should be more willing to provide such information following a SoP failure. In this case, the increased disclosures should also lead to more favorable SoP voting outcomes, as pointed out in hypothesis ***H3(b)***. Alternatively, no such change around these events would be observed if either KPI disclosures are irrelevant for SoP voting, or investors have all required information prior to the event, or boards obfuscate information in their proxy materials to conceal managerial excesses. We test the above predictions by estimating Eqs. (6) and (7) and report these results in Tables 7 and 8, respectively.

The results reported in Table 7 show that both *Past %Against* (in Columns (1) to (3)), and *Past Dissent* (in Columns (4) to (6)), are positively and significantly associated with *ΔKPI_Disclosure*. This result is also robust to a variety of controls. In terms of economic significance, past SoP disapproval (i.e., *Past Dissent* = 1) is associated with an average increase of 0.17 to 0.21 in *KPI_Disclosure*, which corresponds to an increase of 6% to 7% of this variable's median. These results confirm that firms whose optimal levels of disclosure are potentially affected by an adverse SoP outcome respond by increasing their discussions of performance metrics in the proxy materials for the subsequent SoP vote.

We next investigate whether the enhanced KPI-related disclosures provided by firms that have previously failed SoP votes are effective in reducing the likelihood of a repeat negative SoP vote (i.e., less than 70% voting support). Accordingly, the results reported in Table 8 show that the coefficient on the interaction term, *Past %Against x ΔKPI_Disclosure*,

is negative and significant at the 10% level across all specifications. This finding indicates that increased disclosures following failed SoP votes are associated with lower likelihood of shareholder dissent at the next SoP voting. However, unlike the previous analyses of ISS 'Against firms', as this analysis does not control for potential changes in underlying compensation structures, we cannot rule out the possibility of these results being affected by endogeneity arising from omitted correlated variables. Therefore, we only infer associations from this analysis and do not attempt to draw causal conclusions.

Overall, the results presented in Tables 7 and 8 show that when adverse SoP votes change the trade-offs between a firm's benefits and costs of compensation disclosures for the next period, firms respond to these changes by increasing their KPI disclosures in the next period, and that this change is related to a reduced likelihood of a subsequent SoP disapproval. These findings are consistent (but not necessarily exclusively) with our earlier conclusions, that SoP voting creates market-driven incentives for firms to provide additional information on their compensation disclosures that are useful to shareholders' SoP voting decisions. Hence, the indirect regulation approach can be an effective mechanism to elicit more disclosures from firms when there is a greater demand for such information – an outcome that direct disclosure mandates may not be able to achieve on their own.

8. Conclusion

This paper proposes that indirect regulation of disclosures, whereby stakeholders are required to vote on a management proposal, can incentivize firms to reveal additional information that are useful to stakeholders over and above any disclosures that are induced by mandatory rules alone. Under this approach, the regulations require firms to obtain stakeholder approval of a corporate decision through their voting on a resolution, putting the onus on the firms' managers and board of directors to ensure that the stakeholders have all the necessary information to vote in favor of the proposal. Failure to provide the necessary information increases the chances of the stakeholders rejecting the management proposals, leaving the firms or its managers to face the resultant costs.

In contrast to direct disclosures that penalize firms for failing to meet a threshold on quantity or quality of disclosure, the indirect regulatory approach imposes a cost on firms by linking the disclosures to the outcomes from stakeholder-voting that are based on the disclosed information. Unlike direct regulation, indirect regulation does not ex-ante list the specific set of information to be disclosed and leaves the choice on quantity, quality and method of disclosure to individual firms.

Although indirect regulation has its benefits, it would not be effective if managers do not respond to the increased demands for information, which may happen if managers believe the consequences of voting outcomes to be less important than the costs arising from increased disclosures and the greater monitoring of their activities by stakeholders.

To study whether indirect regulations can incrementally entice firms to reveal addition information to stakeholders, we empirically investigate disclosure changes that occur around the adoption of the SoP mandate in January 2011. Although firms were required to disclose performance metrics even prior to the passage of the SoP rule, we find that firms start to provide more disclosures of their KPIs in the post-SoP period and that this improvement occurs particularly in firms facing a greater information demand from their investors, as proxied by firms whose executive pay appear excessive.

Corroborating the view that these changes in disclosures arise from firms responding to incentives created by the SoP mandate, we find pronounced disclosure changes for firms receiving an ISS "Against" recommendation. In specific, we show that firms receiving an ISS "Against" recommendation and, thereby, facing higher chances of failing the SoP vote are more likely to file additional proxy materials prior to the voting date and include disproportionately more KPI disclosures in these filings compared to other firms. The KPI disclosures in the additional proxy materials of firms receiving an ISS "Against" recommendation also have a more positive effect on the voting outcomes relative to KPI disclosures given in their original definitive proxy statements. We also show that similar disclosure changes occur for firms that had previously failed their SoP votes. When firms receive a dissenting SoP vote, they increase their KPI disclosures ahead of the next SoP vote and these increased disclosures help to improve the likelihood of subsequent SoP approval.

Over time, the SEC has mandated increasingly extensive and comprehensive disclosures of information on executive compensation. Our paper documents that indirect regulation of disclosures through shareholder voting on management proposals can induce firms to provide additional useful information to the shareholders. Our findings establish that the investors' demand for information has an incremental effect on firms' decisions to reveal information. However, more research is needed to understand whether and when the costs imposed by an indirect regulation justify the benefits of such a regulation.

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Appendix A: Key Words and Phrases for Content Analysis

This appendix presents the balanced scorecard-based dimensions and their typical key performance indicators (KPIs), which are used to parse the SEC filings. This list of non-financial KPIs is constructed by drawing upon the academic and practitioner literature that discusses implementation of the balanced scorecard approach (Kaplan and Norton, 1992, 2000 and Parmenter, 2007).

Dimension	Key word/phrase
Customer perspective	Customer (or) client (or) consumer (with any of) perspective, focus, satisfaction, loyalty, relationship, service, evaluation, survey, complaints, acquisition, retention, profitability, intimacy, value
	Competition (or) competitive (with any of) strategy, position, leadership, scenario, advantage
	Brand (with any of) value, equity, image, reputation
	Market (with either of) share, leadership
	Product (or) segment leadership
Internal business perspective	Process cycle time
	Time to market
	Product (or) process (with either of) quality, defects
	Supply chain (or) logistics (or) capacity (or) distribution (with) management
	Operational (or) functional (with) excellence (or) efficiency
	Productivity (or) process control (with) improvement
	Asset (or) capacity (with) utilization
	On-time delivery
	Cost savings
	Revenue (or) margin (with) improvement
Innovation and learning perspective	Innovation (or) learning and growth
	Strategy (or) strategic (with any of) initiatives, execution, alignment, awareness
	Technology leadership
	Adaptability
	Empowerment
	Increasing expertise
	Product (or) process (or) services (with either of) innovation, improvement
	Milestones (or) goals (or) targets (or) objectives
	Long (with) term (or) horizon
	Intangible assets
	Corporate (or) company (or) organizational (with) culture
	Value creation
	Knowledge (or) ideas (with) sharing

Appendix A: Key Words and Phrases for Content Analysis (cont.)

Dimension	Key word/phrase
Employee perspective	Employee (or) staff (or) workforce (with any of) satisfaction, engagement, development, training, skills, knowledge, competencies, retention, attrition, survey, motivation, diversity, turnover, churn
	Peer evaluation
	360-degree feedback
	Leadership skills
	Personal growth
	Teamwork
Environment and community perspective	Corporate social responsibility
	Community leadership
	Health, safety and environment
	Carbon (or) water footprint
	Energy consumption
	Waste (or) product recycling
	Corporate citizen
	External stakeholders
(General)	Non-financial measures (or) metrics

Appendix B: Variable Definitions

Variable Name	Definition and Calculation of Variable
KPI_Disclosure	Total number of times the key words and phrases listed in Appendix A are mentioned in the proxy materials (Forms DEF 14A and DEFA 14A), scaled by *TWords* (defined below)
KPI_DEF14A	Total number of times the key words and phrases listed in Appendix A are mentioned in the proxy statement (Form DEF 14A), scaled by *TWords* (defined below)
KPI_ AddMatl	Total number of times the key words and phrases listed in Appendix A are mentioned in the additional proxy materials (Form DEFA 14A), if any are filed, scaled by *TWords* (defined below)
AddMatl_Filing	Indicator variable that takes the value of 1 if a firm files additional proxy materials (Form DEFA 14A) with the SEC in connection with an upcoming Annual General Meeting, and 0 otherwise
Pay	Natural logarithm of the total compensation (in thousands) awarded to the NEOs for the most recent financial year
Res_Pay	*Residual Pay*, computed by first estimating the expected aggregate compensation for NEOs using the Core, Guay, and Larcker (2008) approach and then subtracting it from *Pay* (defined above). Specifically, the expected aggregate compensation is computed as the predicted value for each firm-year from the following OLS regression estimated annually: $Pay_{it} = \beta_0 + \beta_1 CEO\_Tenure_{it} + \beta_2 Sales_{it-1} + \beta_3 SP500_{it} + \beta_4 BTM_{it-1} + \beta_5 Ret_{it} + \beta_6 Ret_{it-1} + \beta_7 RoA_{it} + \beta_8 RoA_{it-1} + \Lambda_I + \upsilon_{it}$ where Λ_I is the Fama and French 48 industry fixed effects
%Against	Percentage of votes received AGAINST the mandatory Say-On-Pay (SoP) proposal out of the total shareholder votes cast at an Annual General Meeting, ignoring abstentions (x 100)
Dissent	Indicator variable that takes the value of 1 if a firm does not receive more than 70% shareholder support for the executive compensation presented for the mandatory SoP vote at an Annual General Meeting, and 0 otherwise
ISS_Against	Indicator variable that takes the value of 1 if a firm receives an AGAINST recommendation from the Institutional Shareholder Services (ISS) proxy advisors on the mandatory SoP vote considered at an Annual General Meeting, and 0 otherwise
Fog	Gunning Fog Index of all proxy materials (Forms DEF 14A and DEFA 14A) provided to the shareholders and filed with the SEC in connection with an upcoming Annual General Meeting
Fog_DEF14A	Gunning Fog Index of the proxy statement (Form DEF 14A) filed with the SEC
Fog_AddMatl	Gunning Fog Index of any additional proxy materials (Form DEFA 14A), if filed
TWords	Total number of words (in thousands) used in all proxy materials (Forms DEF 14A and DEFA 14A) provided to the shareholders in connection with an upcoming Annual General Meeting

Variable Name	Definition and Calculation of Variable
TWords_DEF14A	Total number of words (in thousands) used in the proxy statement (Form DEF 14A) filed with the SEC
TWords_AddMatl	Total number of words (in thousands) used in any additional proxy materials (Form DEFA 14A), if filed
KPI_10K	Total number of times the key words and phrases listed in Appendix A are mentioned in the most recent Form 10-K, scaled by *Twords_10K* (defined below)
TWords_10K	Total number of words (in thousands) used in the Form 10-K for the most recent financial year
Fog_10K	Gunning Fog Index of the Form 10-K for the most recent financial year
RoA	*Return on Assets*, computed as income before extraordinary items, scaled by average total assets
Ret	Cumulative size-adjusted stock returns over the 12-month period prior to an Annual General Meeting
Size	Natural logarithm of the average monthly market capitalization (in thousands) over the 12-month period prior to an Annual General Meeting
BTM	Ratio of the average book value of equity to the average monthly market capitalization
Turn	Average monthly turnover of the firm, calculated as the total number of shares traded divided by the number of shares outstanding, and averaged over the 12-months prior to an Annual General Meeting
Vol	Standard deviation of monthly stock returns over the 12-month period prior to an Annual General Meeting
Lev	Ratio of the average total long- and short-term debt to the average monthly market capitalization
HTV	*Hard-to-Value* measure of firms (Barth et al., 2001), calculated as the ratio of the sum of R&D and advertising expenses to the total operating expenses
InstOship	Percentage shareholding of institutional investors, as obtained from their 13-F filings (Thomson Reuters S-34 database)
InsiderOship	Aggregate percentage shareholding of all executives, as obtained from the ExecuComp database
Post	Indicator variable that takes a value of 1 if the Annual General Meeting of shareholders is held after January 21, 2011, i.e., the effective date for the Say-on-Pay voting requirement, and 0 otherwise
CEO_Tenure	Natural logarithm of the number of years an executive has served as the CEO of a firm, as identified by the ExecuComp database
Sales	Natural logarithm of reported sales (in millions)
SP500	Indicator variable taking the value of 1 if firm is a member of the S&P500 index, and 0 otherwise

Table 1: Descriptive Statistics and Main Variable Correlations

Panel A of this table presents the descriptive statistics for the main variables across all firm-year observations over the sample period from 2008 to 2016. Panel B presents the Pearson (below diagonal) and Spearman (above diagonal) correlations between the main variables, with all values significant at the 99% level in **bold**. All of the variables are defined in Appendix B.

Panel A: Descriptive Statistics

Variables	N	Mean	Std Dev	P25	Median	P75
KPI_Disclosure	11,014	3.10	1.54	2.04	3.04	4.07
Fog	11,014	21.17	1.47	20.18	21.04	22.00
TWords	11,014	32.63	19.28	20.97	28.30	38.83
Pay	11,014	9.31	0.87	8.71	9.31	9.92
Res_pay	11,014	0.00	0.47	-0.28	0.00	0.28
%Against	7,232	8.72	11.98	2.00	3.88	8.99
Dissent	7,232	0.08	0.27	0.00	0.00	0.00
ISS_Against	7,232	0.11	0.31	0.00	0.00	0.00
KPI_DEF 14A	11,014	3.03	1.56	1.96	2.99	4.02
Fog_DEF14A	11,010	20.96	2.63	20.18	21.04	21.99
TWords_DEF 14A	11,010	30.69	14.69	20.69	27.81	37.48
AddMatl_Filing	7,232	0.17	0.38	0.00	0.00	0.00
KPI_AddMatl	1,709	0.46	0.96	0.03	0.09	0.41
Fog_AddMatl	1,706	18.15	4.61	14.57	17.39	20.67
TWords_AddMatl	1,706	13.66	38.05	0.78	1.47	4.35
KPI_10K	9,204	5.22	4.24	2.14	3.69	7.26
TWords_10K	9,352	48.31	21.53	34.34	43.40	55.90
Fog_10K	9,352	20.22	0.91	19.61	20.16	20.79
RoA	11,014	0.04	0.10	0.01	0.04	0.08
Ret	11,014	0.03	0.38	-0.16	0.00	0.17
Size	11,014	14.59	1.60	13.45	14.46	15.63
BTM	11,014	0.57	0.46	0.29	0.48	0.75
Turn	11,014	0.23	0.16	0.12	0.18	0.28
Vol	11,014	0.11	0.07	0.06	0.09	0.13
Lev	11,014	0.23	0.19	0.06	0.20	0.34
HTV	11,014	0.06	0.11	0.00	0.01	0.07
InstOship	10,055	72.87	17.07	63.65	75.57	85.51
InsiderOship	11,014	3.30	5.83	0.44	1.34	3.26

Panel B: Pearson and Spearman Rank Correlations of the Main Variables

	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1)	KPI_Disclosure		**-0.13**	**0.05**	**0.37**	**0.07**	**0.06**	-0.01	-0.02
(2)	Fog	**-0.15**		**0.42**	**0.06**	**0.09**	0.01	**0.03**	**0.05**
(3)	TWords	**-0.08**	**0.40**		**0.47**	**0.18**	**0.15**	**0.05**	**0.04**
(4)	Pay	**0.35**	**0.07**	**0.34**		**0.53**	**0.26**	**0.08**	**0.08**
(5)	Res_Pay	**0.06**	**0.09**	**0.13**	**0.56**		**0.28**	**0.09**	**0.12**
(6)	%Against	0.00	**0.05**	**0.08**	**0.21**	**0.29**		**0.22**	**0.30**
(7)	Dissent	-0.01	**0.04**	**0.06**	**0.15**	**0.20**	**0.83**		**0.17**
(8)	ISS_Against	**-0.04**	**0.05**	**0.05**	**0.14**	**0.22**	**0.75**	**0.68**	

Table 2: Mandatory SoP Voting and Disclosures of KPIs in Proxy Materials

This table presents the results for the below difference-in-differences regression specification:

$KPI\_Disclosure_{it} = \alpha_0 + \alpha_1 Res\_Pay_{it} + \alpha_2 Post\ x\ Res\_Pay_{it} + \Sigma\ \alpha_k \boldsymbol{CONTROLS}_{it} + \Pi_i + \Gamma_t + \varepsilon_{it}$

In Column (4), *Res_Pay* is replaced by an indicator variable set to 1 for the top tercile of *Residual Pay* and 0 for the bottom tercile. In Column (5), $KPI\_Disclosure_{it}$ is replaced by $FIN\_Disclosure_{it}$ as the dependent variable. See Appendix B for variable definitions. Firm and year fixed effects are included. Standard errors are clustered at the industry-year level. The asterisks ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively. The t-statistics are in parentheses.

	(1)	(2)	(3)	(4)	(5)
VARIABLES	KPI_Disclosure	KPI_Disclosure	KPI_Disclosure	KPI_Disclosure	FIN_Disclosure
Post x Res_Pay	0.115**	0.145***	0.130**	0.143*	0.072***
	(2.42)	(2.74)	(2.37)	(1.95)	(3.47)
Res_Pay	-0.021	-0.006	-0.001	-0.078	-0.015
	(-0.48)	(-0.13)	(-0.03)	(-1.18)	(-0.81)
Fog		-0.187***	-0.151***	-0.154***	-0.033***
		(-9.49)	(-5.81)	(-4.59)	(-2.87)
Post x Fog			-0.050**	-0.035	-0.035***
			(-2.15)	(-1.21)	(-3.52)
TWords		-0.019***	-0.023***	-0.023***	0.001
		(-15.15)	(-12.08)	(-11.50)	(1.60)
Post x TWords			0.006***	0.007***	-0.001
			(2.84)	(3.13)	(-0.61)
KPI_10K		0.022***	0.083***	0.084***	-0.014**
		(4.37)	(4.26)	(3.91)	(-2.06)
Post x KPI_10K			-0.059***	-0.060***	0.007
			(-3.16)	(-2.95)	(1.07)
TWords_10K		-0.000	-0.000	0.001	-0.002***
		(-0.26)	(-0.24)	(0.39)	(-2.95)
Post x TWords_10K			0.001	0.002	0.000
			(0.68)	(1.07)	(0.72)
Fog_10K		0.065*	0.054	0.049	0.031
		(1.73)	(1.29)	(0.89)	(1.64)
Post x Fog_10K			0.037	0.002	0.002
			(1.15)	(0.05)	(0.19)
RoA		-0.149	-0.118	0.079	0.046
		(-0.80)	(-0.64)	(0.35)	(0.66)
Ret		-0.039	-0.039	-0.077**	-0.005
		(-1.34)	(-1.35)	(-2.11)	(-0.41)
Size		0.094**	0.098**	0.038	0.030
		(2.17)	(2.26)	(0.62)	(1.45)
BTM		0.047	0.046	-0.012	0.005
		(0.90)	(0.91)	(-0.15)	(0.24)
Turn		-0.171	-0.098	-0.134	0.109*
		(-0.99)	(-0.58)	(-0.69)	(1.66)
Vol		-0.376	-0.360	-0.041	-0.122
		(-1.59)	(-1.52)	(-0.12)	(-1.05)
Lev		-0.247	-0.258	-0.077	-0.078
		(-1.09)	(-1.14)	(-0.25)	(-0.74)
HTV		-0.432	-0.413	-0.926	-0.045
		(-1.06)	(-0.98)	(-1.63)	(-0.31)
InstOship		0.002	0.001	0.002	0.000
		(0.92)	(0.69)	(0.98)	(0.11)
InsiderOship		-0.006	-0.006	-0.003	0.000
		(-1.29)	(-1.32)	(-0.51)	(0.00)
Observations	10,874	8,186	8,186	5,240	7,530

Adjusted R-squared	0.501	0.600	0.602	0.618	0.441
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes

Table 3: Persistence of Changes in KPI Disclosure and Parallel Trends Analysis

This table presents the results for the following OLS regression specification:

$$KPI\_Disclosure_{it} = \alpha_0 + \alpha_1 Res\_Pay_{it} + \alpha_2 Pre2 \times Res\_Pay_{it} + \alpha_3 Pre1 \times Res\_Pay_{it} + \alpha_4 Post1 \times Res\_Pay_{it} + \alpha_5 Post2 \times Res\_Pay_{it} + \alpha_6 Post3 \times Res\_Pay_{it} + \alpha_7 Post4 \times Res\_Pay_{it} + \Sigma \alpha_k \boldsymbol{CONTROLS}_{it} + \Pi_i + \Gamma_t + \varepsilon_{it}$$

Pre1 and *Pre2* are indicator variables set equal to 1 for annual meetings held 1 and 2 years prior to the SoP mandate, while *Post1* through *Post4* are indicator variables set equal to 1 for annual meetings held 1 through 4 years after the SoP mandate. In Column (7), $KPI\_Disclosure_{it}$ is replaced by $FIN\_Disclosure_{it}$ as the dependent variable. See Appendix B for definitions of all other variables. The sample for this analysis is restricted to all annual meetings held in the period between 3 years before and 5 years after the SoP mandate. Firm and year fixed effects are included. Standard errors are clustered at the industry-year level. Regressions with controls include the full set of control variables in Table 2 that have not been presented here to conserve space. The asterisks ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The t-statistics are in parentheses.

VARIABLES	(1) KPI_ Disclosure	(2) KPI_Discl osure	(3) KPI_Discl osure	(4) KPI_Discl osure	(5) KPI_Discl osure	(6) KPI_ Disclosure	(7) FIN_ Disclosure
Pre2 x Res_Pay	0.021	0.103	0.097	0.022	0.103	0.098	0.067*
	(0.28)	(1.11)	(1.09)	(0.29)	(1.11)	(1.10)	(1.89)
Pre1 x Res_Pay	0.107	0.114	0.107	0.107	0.114	0.107	0.030
	(1.18)	(1.14)	(1.09)	(1.18)	(1.14)	(1.09)	(0.91)
Post x Res_Pay	0.167**	0.236**	0.219**				
	(2.05)	(2.57)	(2.48)				
Post1 x Res_Pay				0.161	0.209**	0.193*	0.107***
				(1.64)	(2.01)	(1.91)	(2.78)
Post2 x Res_Pay				0.216**	0.281***	0.262***	0.133***
				(2.36)	(2.74)	(2.62)	(3.54)
Post3 x Res_Pay				0.198*	0.239**	0.220*	0.077*
				(1.80)	(2.05)	(1.95)	(1.91)
Post4 x Res_Pay				0.089	0.218*	0.202*	0.140**
				(0.85)	(1.74)	(1.65)	(2.39)
Res_Pay	-0.061	-0.099	-0.090	-0.062	-0.100	-0.091	-0.056*
	(-0.81)	(-1.10)	(-1.07)	(-0.82)	(-1.12)	(-1.08)	(-1.73)
Observations	9,952	7,646	7,646	9,952	7,646	7,646	7,530
Adjusted R-sq.	0.527	0.620	0.621	0.527	0.620	0.621	0.441
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	Yes	No	Yes	Yes	Yes
Post x Textual Measures	No	No	Yes	No	No	Yes	Yes

Table 4: Annual Report (10-K) KPI disclosures around SoP Mandate – Placebo Test

This table presents the results for the following OLS regression specification:

$KPI\_10K_{it} = \alpha_0 + \alpha_1 Res\_Pay_{it} + \alpha_2 Post\ x\ Res\_Pay_{it} + \Sigma\ \alpha_k \boldsymbol{CONTROLS}_{it} + \Pi_i + \Gamma_t + \varepsilon_{it}$

See Appendix B for variable definitions. Firm and year fixed effects are included. Standard errors are clustered at the industry-year level. Regressions with additional controls include the full set of control variables in Table 2, although only the coefficients for disclosure-related variables are presented to conserve space. The asterisks ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The t-statistics are in parentheses.

	(1)	(2)	(3)
VARIABLES	KPI_10K	KPI_10K	KPI_10K
Post x Res_Pay	0.001	0.021	0.106
	(0.01)	(0.14)	(0.75)
Res_Pay	-0.093	-0.125	-0.195*
	(-0.88)	(-1.02)	(-1.68)
KPI_Disclosure		0.148***	-0.055
		(4.32)	(-1.38)
Post x KPI_Disclosure			0.339***
			(7.54)
Fog		0.040	0.131**
		(1.04)	(2.24)
Post x Fog			-0.095
			(-1.59)
TWords		0.000	-0.017***
		(0.16)	(-3.78)
Post x TWords			0.026***
			(5.11)
TWords_10K		-0.048***	-0.027***
		(-11.71)	(-6.19)
Post x TWords_10K			-0.037***
			(-7.64)
Fog_10K		-0.086	0.012
		(-0.81)	(0.11)
Post x Fog_10K			-0.294***
			(-2.93)
Observations	9,053	8,186	8,186
Adjusted R-squared	0.618	0.635	0.649
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Additional Controls	No	Yes	Yes

Table 5: Additional Proxy Materials in Response to an ISS "Against" Recommendation

This table presents the results for the following conditional logit regressions in Columns (1) and (2), as estimated by using the full sample of firms that had an SoP vote, and the OLS panel regressions in Columns (3) and (4), estimated by using the sub-sample of firms that filed additional proxy materials (DEFA 14A) with the SEC prior to the SoP vote.

Conditional Logit: $Pr(AddMatl\_Filing)_{it} = \beta_0 + \beta_1 ISS\_Against_{it} + \beta_2 Res\_Pay_{it} + \Sigma \beta_k \boldsymbol{CONTROLS}_{it} + \upsilon_{it}$

OLS Regressions: $KPI\_AddMatl_{it} = \alpha_0 + \alpha_1 ISS\_Against_{it} + \alpha_2 Res\_Pay_{it} + \Sigma \alpha_k \boldsymbol{CONTROLS}_{it} + \Lambda_I + \Gamma_t + \varepsilon_{it}$

All of the variables are defined in Appendix B. The OLS regressions include industry and year fixed effects, and the conditional logit regressions are estimated within industry-year groups. Standard errors are clustered at the industry-year level. Regressions with additional controls include the full set of control variables in Table 2, although only the coefficients for disclosure-related variables are presented to conserve space. The asterisks ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The t-statistics are in parentheses.

	(1)	(2)	(3)	(4)
	Conditional Logit		OLS	
VARIABLES	AddMatl_Filing	AddMatl_Filing	KPI_AddMatl	KPI_AddMatl
ISS_Against	1.387***	1.480***	0.159**	0.181**
	(14.30)	(13.08)	(2.27)	(2.51)
Res_Pay	0.018	-0.065	0.026	0.073
	(0.18)	(-0.57)	(0.39)	(1.02)
Fog_AddMatl			-0.003	-0.006
			(-0.62)	(-1.09)
TWords_AddMatl			0.002**	0.002**
			(2.54)	(2.21)
KPI_DEF14A	-0.080***	-0.116***	-0.063***	-0.066***
	(-2.75)	(-3.83)	(-4.96)	(-4.53)
Fog_DEF14A	-0.261***	-0.238***	-0.111***	-0.110***
	(-17.75)	(-15.30)	(-7.83)	(-7.05)
TWords_DEF14A	0.045***	0.039***	-0.002*	-0.002
	(13.15)	(10.28)	(-1.95)	(-1.56)
KPI_10K	0.039***	0.020*	0.001	0.002
	(4.27)	(1.92)	(0.13)	(0.41)
TWords_10K	0.002	-0.004	-0.003**	-0.002
	(0.87)	(-1.50)	(-2.14)	(-1.42)
Fog_10K	0.055	0.098*	0.049	0.051
	(1.06)	(1.73)	(1.42)	(1.59)
Observations	5,419	4,955	925	858
Grouped by	Industry-Year	Industry-Year	N/A	N/A
Additional Controls	No	Yes	No	Yes
Industry FE	N/A	N/A	Yes	Yes
Year FE	N/A	N/A	Yes	Yes
Pseudo/Adj. R2	0.159	0.175	0.491	0.488

Table 6: Disclosures in Additional Proxy Materials and SoP Outcomes

This table presents the results for the below OLS regression in Column (1):

$$\%Against_{it} = \beta_0 + \beta_1 KPI\_AddMatl_{it} \times ISS\_Against_{it} + \beta_2 KPI\_AddMatl_{it} + \Sigma \beta_k \boldsymbol{CONTROLS}_{it} + \Lambda_I + \Gamma_t + \upsilon_{it}$$

And, the below conditional logit regression in Column (2):

$$Pr(Dissent)_{it} = \alpha_0 + \alpha_1 KPI\_AddMatl_{it} \times ISS\_Against_{it} + \alpha_2 KPI\_AddMatl_{it} + \Sigma \alpha_k \boldsymbol{CONTROLS}_{it} + \varepsilon_{it}$$

These regressions are estimated using the sub-sample of firms that filed additional proxy materials (DEFA 14A) prior to SoP votes and include all control variables in Table 2, although only disclosure-related variables are presented to conserve space. All of the variables are defined in Appendix B. The OLS regression includes industry and year fixed effects, while the conditional logit regression is estimated within industry-year groups. Standard errors are clustered at the industry-year level. The asterisks ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The t-statistics are in parentheses.

VARIABLES	(1) %Against	(2) Dissent
KPI_AddMatl x ISS_Against	-4.649***	-0.651**
	(-3.01)	(-2.10)
KPI_AddMatl	0.422	0.366
	(0.81)	(1.26)
KPI_DEF14A x ISS_Against	-0.989	0.331
	(-1.45)	(0.81)
KPI_DEF14A	0.207	-0.453
	(0.87)	(-1.13)
Fog_AddMatl x ISS_Against	-0.755***	-0.185
	(-2.99)	(-1.38)
Fog_AddMatl	0.117*	0.100*
	(1.78)	(1.71)
TWords_AddMatl x ISS_Against	0.094***	0.051**
	(2.82)	(1.99)
TWords_AddMatl	0.002	-0.011
	(0.16)	(-1.09)
ISS_Against	46.802***	8.502**
	(8.58)	(2.53)
Res_Pay	5.202***	1.974***
	(7.10)	(2.61)
Fog	-0.133	-0.112
	(-0.58)	(-0.72)
TWords	-0.014	-0.012
	(-0.80)	(-0.77)
KPI_10K	0.187**	0.051
	(2.17)	(0.92)
TWords_10K	0.005	-0.001
	(0.24)	(-0.06)
Fog_10K	-0.278	-0.013
	(-0.66)	(-0.04)
Observations	797	579
Adj./Pseudo R-squared	0.754	0.794
Industry FE	Yes	N/A
Year FE	Yes	N/A
Grouped By	N/A	Industry-Year
KPI_AddMatl x ISS_Against – KPI_DEF14A x ISS_Against	-3.661	-0.982
t-statistic	-2.202	-2.305

Table 7: Changes in KPI Disclosures after Negative SoP Vote in the Previous Period

This table presents the results for the following OLS regression:

$$\Delta KPI\_Disclosure_{it} = \alpha_0 + \alpha_1 SoP\ Disapproval_{it-1} + \alpha_2 \Delta Pay_{it} + \alpha_3 ISS\_Against_{it} + \Sigma\, \alpha_k \Delta Other\ Disclosure\ Measures_{it} + \Sigma\, \beta_k \boldsymbol{CONTROLS}_{it} + \Lambda_I + \Gamma_t + \varepsilon_{it}$$

$\Delta KPI\_Disclosure$ is the year-on-year change in *KPI_Disclosure*. $SoP\ Disapproval_{it-1}$ is *Past %Against* in Columns (1) to (3), defined as the percentage of votes cast against the SoP proposal in the previous period "*t-1*", and $SoP\ Disapproval_{it-1}$ is *Past Dissent* in Columns (4) to (6), which is an indicator variable set to equal 1 if *%Against* is 30% or higher in the previous period "*t-1*" and 0 otherwise. ΔPay is the year-on-year change in *Pay*. Regressions with additional controls include the full set of control variables in Table 2, although only the coefficients for disclosure-related variables are presented to conserve space. Industry and year fixed effects are included, and standard errors are clustered at the industry-year level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The t-statistics are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	ΔKPI_Disclosure	ΔKPI_Disclosure	ΔKPI_Disclosure	ΔKPI_Disclosure	ΔKPI_Disclosure	ΔKPI_Disclosure
Past %Against	0.005***	0.006***	0.006***			
	(3.80)	(2.90)	(2.80)			
Past Dissent				0.205***	0.173**	0.169*
				(3.24)	(2.06)	(1.94)
ISS_Against			-0.001			0.019
			(-0.01)			(0.27)
ΔPay	0.144***	0.153***	0.153***	0.134***	0.141***	0.139**
	(3.47)	(2.82)	(2.79)	(3.29)	(2.63)	(2.58)
ΔFog	-0.191***	-0.191***	-0.191***	-0.191***	-0.191***	-0.191***
	(-9.49)	(-7.54)	(-7.49)	(-9.45)	(-7.52)	(-7.46)
ΔTWords	-0.019***	-0.020***	-0.020***	-0.019***	-0.020***	-0.020***
	(-15.31)	(-11.79)	(-11.73)	(-15.17)	(-11.71)	(-11.68)
ΔKPI_10K	0.014***	0.013**	0.013**	0.014***	0.013**	0.013**
	(2.96)	(2.26)	(2.26)	(2.84)	(2.19)	(2.19)
ΔTWords_10K	0.005*	0.007**	0.007**	0.005*	0.007**	0.007**
	(1.97)	(2.32)	(2.32)	(1.96)	(2.33)	(2.33)
ΔFog_10K	-0.037	-0.062	-0.062	-0.036	-0.063	-0.062
	(-0.70)	(-0.82)	(-0.82)	(-0.68)	(-0.83)	(-0.83)
Observations	4,977	3,331	3,331	4,977	3,331	3,331
Adj. R-squared	0.178	0.179	0.179	0.178	0.177	0.177
Additional Controls	No	Yes	Yes	No	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 8: Changes in Disclosures and Probability of Repeat Negative SoP Vote

This table presents the results for the following conditional logit regression specification:

$$Pr(Dissent)_{it} = \alpha_0 + \alpha_1 Past\%Against_{it-1} \times \Delta KPI\_Disclosure_{it} + \alpha_2 Past\%Against_{it-1} + \alpha_3 \Delta KPI\_Disclosure_{it} + \alpha_4 KPI\_Disclosure_{it} + \alpha_5 \Delta Pay_{it} + \alpha_6 Res\_Pay_{it} + \alpha_7 ISS\_Against_{it} + \Sigma\alpha_k \boldsymbol{CONTROLS}_{it} + \varepsilon_{it}$$

Past %Against is defined as the percentage of votes cast against the SoP proposal in the previous period "*t-1*". *ΔKPI_Disclosure* is the year-on-year change in *KPI_Disclosure*. *ΔPay* is the year-on-year change in *Pay*. All regressions include the full set of control variables listed in Table 2, although only the coefficients for disclosure-related variables are presented to conserve space. Regressions are estimated within industry-year groups, and the standard errors are clustered at the industry-year level. The asterisks ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The t-statistics are in parentheses.

	(1)	(2)	(3)
VARIABLES	Dissent	Dissent	Dissent
Past %Against x ΔKPI_Disclosure	-0.010*	-0.009*	-0.010*
	(-1.83)	(-1.73)	(-1.72)
Past %Against	0.042***	0.042***	0.040***
	(5.57)	(5.61)	(5.06)
ΔKPI_Disclosure	0.255*	0.297*	0.306*
	(1.69)	(1.79)	(1.83)
KPI_Disclosure		-0.108	-0.112
		(-1.05)	(-1.09)
ΔPay			-0.299
			(-1.15)
Res_Pay	1.325***	1.325***	1.476***
	(4.40)	(4.41)	(4.77)
ISS_Against	5.212***	5.216***	5.228***
	(13.90)	(13.95)	(13.87)
Fog	-0.146	-0.163*	-0.160*
	(-1.60)	(-1.77)	(-1.73)
TWords	0.008	0.008	0.008
	(1.41)	(1.31)	(1.24)
KPI_10K	0.035	0.037	0.036
	(0.96)	(1.03)	(1.01)
TWords_10K	0.004	0.004	0.004
	(0.54)	(0.51)	(0.55)
Fog_10K	-0.051	-0.048	-0.065
	(-0.41)	(-0.39)	(-0.52)
Observations	3,192	3,192	3,192
Grouped By	Industry-Year	Industry-Year	Industry-Year
Additional controls	Yes	Yes	Yes
Pseudo R-squared	0.744	0.744	0.745