Public Sentiment Decomposition and Shareholder Actions*

Reena Aggarwal
McDonough School of Business, Georgetown University
aggarwal@georgetown.edu

Hoa Briscoe-Tran
Alberta School of Business, University of Alberta
hxtran@ualberta.ca

Isil Erel
Fisher College of Business, Ohio State University; NBER; ECGI
erel@fisher.osu.edu

Laura T. Starks
McCombs School of Business, University of Texas at Austin
lstarks@mail.utexas.edu

March 20, 2025

Abstract

Employing a novel approach with unique public sentiment data and a new metric for shareholder concerns, we establish an association between public sentiment and shareholder actions. We demonstrate that the number of shareholder proposals effectively captures investor dissatisfaction with a firm, particularly since it includes firms without shareholder proposals. We find that negative sentiment about financial, governance, environmental or social issues is significantly associated with more shareholder proposals, and we establish causality through a creative instrumental variable approach. Further, shareholder actions have real consequences as a larger number of shareholder proposals is associated with higher turnover for CEOs and directors.

JEL: G32; G34; G38.
Keywords: Public Opinion, Public Outrage, Proxy Advisors, Institutional Investors, Proxy Voting.

* We are grateful for valuable comments from participants at the 2024 ASSA Meeting – Econometric Society North American Meeting, the FMA virtual seminar, the University of Florida and to Richard Petersen for feedback.

1. Introduction

Public sentiment regarding corporate practices has become increasingly pronounced, particularly with the rise of social media and the broader accessibility of information. This heightened public engagement encompasses a range of issues including, for example, a company's financial performance, product offerings, environmental policies, employee relations, and corporate governance practices. Social media platforms, alongside traditional media outlets, serve as conduits for capturing and disseminating these public opinions about firms. Beyond an ability to influence the decisions of a company's leadership, the sentiment can also affect shareholders, including large institutional investors such as mutual funds, pension funds, and asset managers. Given their role as stewards of capital, these investors would be expected to integrate public sentiment with their own proprietary research to form their investment decisions.

When public dissatisfaction with a firm's policies aligns with shareholder concerns, institutional investors may take active measures to influence the firm's actions. These measures typically fall into two categories, either exiting their ownership – commonly referred to as voting with their feet – or using their voice, i.e., engaging with firm management. Investor engagement involves different strategies, but a common one consists of submitting shareholder proposals for inclusion in the firm's annual proxy statement, a right given to shareholders through Rule 14a-8 of the Securities Exchange Act. However, investors typically employ this strategy only after direct engagement with company leadership has been unsuccessful.

In this paper we examine the extent to which public opinion influences shareholders' engagement actions, as reflected in the submission of shareholder proposals. Alternatively, the possibility exists that public sentiment holds little relevance to shareholders' actions, with investors relying solely on their independent financial and nonfinancial research and priorities,

which may not align with broader public views. Understanding the relationship between public sentiment and shareholder actions is important, particularly with the growing presence of social media along with traditional media.

In our analysis of the relationship between public sentiment and shareholder actions, we provide two innovative contributions. First, we use unique measures of public sentiment to capture the public's views regarding not only a firm's traditional financial and governance attributes but also newer issues of interest such as climate risk and social concerns. We obtain our proxy for sentiment from LSEG's MarketPsych Analytics.[1] MarketPsych generates sentiment data by employing state-of-the-art textual analysis and machine learning on a large collection of news and social media content to measure public sentiment in a highly granular fashion. The data captures public sentiment for individual firms on specific topics, down to a given date or even minute.[2]

Second, our paper introduces a novel approach to assess shareholder dissatisfaction with firm management. Rather than relying on voting outcomes for shareholder proposals, we use the number of shareholder proposals submitted as the primary indicator of shareholder dissent. In any given year, the majority of firms do not have a shareholder proposal on the ballot – either because shareholders have no significant concerns or because they express their dissatisfaction through other means, such as voting against management-nominated directors. To account for this alternative form of dissent, we include an additional measure for robustness: shareholder support for directors, which has also been employed in previous research (e.g., Aggarwal, Dahiya, and Yilmaz, 2024)).

[1] https://www.lseg.com/en/data-analytics/financial-data/analytics/marketpsych-analytics

[2] Our public sentiment concept differs conceptually and in measurement from the investor sentiment studied in Baker and Wurgler (2006), Stambaugh, Yi and Yuan (2012) and Devault, Sias and Starks (2019), which is based on the Baker and Wurgler combined measure of investor sentiment. Specifically, our notion of public sentiment captures all available news and social media sentiment on a firm's practices on a specific topic (financial, environmental, social and governance issues) at each point in time. Thus, our sentiment measure captures broader societal sentiment towards a company, and is not limited to investor sentiment.

The number of shareholder proposals reflects both general shareholder dissent and the range of issues for shareholder concerns. For example, the number of shareholder proposals on the Amazon proxy statement varied across years with 15 proposals in 2022, 18 in 2023 and 14 in 2024. These proposals addressed diverse topics such as executive compensation policies, climate goals, racial and gender pay gaps, warehouse conditions, and tax transparency, among others. The relatively large number of proposals compared to other firms represents the shareholder dissatisfaction with Amazon's leadership. The approach of using the count of shareholder proposals offers a more comprehensive representation of shareholder concerns in a given year. In particular, this approach allows us to examine the association between public sentiment and shareholder dissent across all firms, including those without shareholder proposals – where the absence of shareholder proposals itself reflects important information. Unlike proposal voting outcomes, our measure allows us to capture this absence of proposals. Additionally, since shareholder proposals are relatively few, especially compared to management-sponsored proposals, and are often withdrawn due to agreements with management, our analysis is conducted both including and excluding the withdrawn proposals.

As pointed out by He, Kahraman, and Lowry (2023), although shareholder proposals rarely achieve a majority vote of at least 50 percent, their significance lies in drawing attention to particular issues. Thus, the count of shareholder proposals at a firm provides a more comprehensive measure of shareholder concerns than voting outcomes alone, as it captures the breadth of issues being raised. Supporting our approach, Aggarwal, Dahiya, and Yilmaz (2024) document that the mere presence of a shareholder proposal on the ballot reduces the support for management-sponsored directors in elections.

Our empirical evidence shows that measures of negative public sentiment regarding a firm's financial performance and its broad ESG profiles are both strongly associated with the number of shareholder-sponsored proposals. In addition, the two ESG subcomponents – (1) environment and social sentiments, and (2) governance sentiments – each independently indicate significant relationships with the number of shareholder proposals in their respective categories, (i.e., the E and S sentiment matters for E and S proposals, while the G sentiment matters for G proposals).[3] Moreover, our data allows us to examine the sentiment reflected in social media sources separately from the sentiment reflected in traditional news sources. We find that both sentiment sources significantly impact the number of shareholder proposals.

To assess the relevance of our metric – the number of shareholder proposals as an indicator of shareholder dissent – we examine whether there exist subsequent consequences for the firm's CEO and the directors. We find a significant relationship between the number of shareholder proposals and forced CEO turnover. Additionally, our measure of shareholder dissent correlates with an increased likelihood of director turnover. In terms of economic significance, one additional shareholder proposal on a proxy ballot is associated with an 18.6% increase in forced CEO turnover and a 10% increase in director turnover, both relative to the mean. Corresponding to the result on director turnover, we also find less support in director elections in the presence of more shareholder proposals at a firm.

We next consider employing director election support as an alternative measure to the count of shareholder proposals. When we examine the association between public sentiment and director elections, we find consistent results which is not surprising as many investors express their concerns by voting against directors (see Aggarwal, Dahiya, and Yilmaz (2024)). Lower public

[3] We combine Environmental and Social (E&S) proposals due to their frequent overlap. Many proposals, such as those on CSR reports, address both areas, leading ISS voting analytics to classify them in a combined E&S category.

sentiment leads to a lower support rate for director elections. Further, we find that each of the measures of public sentiment, from ESG to financial sentiments, are associated with the director support rate.

To ascertain whether the effect of public sentiment on shareholder proposals is causal, we ideally need variation in public sentiment independent of firm fundamentals that may directly influence shareholder actions. We propose that such variation arises in the context of scandal movies – films that expose a firm's historical misconduct (Jiang, Kang, Nie, and Zhou, 2024). Given that the scandals depicted occurred in the distant past, the release of these movies is unlikely to reflect the firm's current fundamentals but may negatively impact public sentiment toward the firm. Analyzing a sample of firms featured in scandal movies between 2004 and 2020, we observe a decline in public sentiment relative to control firms. Using the presence of a scandal movie as an instrument for public sentiment allows us to assess its causal effect on shareholder proposals. In this setting, we again find that more negative (instrumented) public sentiment leads to an increase in the number of shareholder proposals.

Our study contributes to understanding the role of public sentiment as a source of information in financial markets. For example, the media plays a role in financial markets as a collector, aggregator, and disseminator of information (e.g., Dyck, Volchkova and Zingales, 2008; Solomon, Soltes, and Sosyura, 2014). Previous studies also suggest that media coverage improves investment decisions by lowering the cost of information acquisition (Grossman and Stiglitz, 1980), increasing investors' awareness of financial assets (Merton, 1987), facilitating the quicker assimilation of information (DellaVigna and Pollet, 2009), and reducing information asymmetry between investors and firms (Tetlock, 2010). Our novel contribution to this body of literature lies in our analysis of both traditional and social media coverage of corporations and in relating this combined

coverage to shareholder actions. Public sentiment can provide additional power to institutional investors' engagements with firms because it reflects the existence of a wider scale of concerns.

Our paper also contributes to the literature on how investors engage with management using their voice and therefore influence firm policies (Hirschman, 1970; Edmans, 2009; Edmans and Manso, 2011; Edmans and Holderness, 2017; Appel, Gormley, and Keim, 2016). McCahery, Sautner, and Starks (2016) and Krueger, Sautner, and Starks (2020), discuss the role of institutional investor engagement with management. However, if direct engagement fails then some investors use the proxy voting mechanism to express their dissatisfaction by voting against management or by submitting shareholder proposals. Shareholder proposals can also be submitted by smaller investors who might not have the opportunity to directly engage with management. The comparative impact of submitting shareholder proposals and voting versus exiting by institutional investors on firm policies has also been examined (e.g., Parrino, Sias, and Starks, 2003). Our focus is on the shareholder dissent through the number of proposals they submit and through their votes in director elections.

We add to previous research that examines how shareholders react to proxy proposals, that is their voting behavior. A number of studies have examined voting on shareholder proposals (e.g., Bethel and Gillan, 2002; Gillan and Starks, 2000; He, Kahraman, and Lowry 2021). In particular, Li, Naaraayanan, and Sachdeva (2021) examine voting by ESG funds relative to non-ESG funds within the same fund family and find that ESG funds are generally less likely to vote against shareholder-sponsored environmental and social proposals. However, there is a condition in which these funds are more likely to vote against these proposals, which is if approval rates are close to the passing threshold due to concerns about financial returns. Even though environmental and social proposals almost always fail to achieve a passing grade, He, Kahraman, and Lowry (2021)

find that higher voting support for these types of proposals predicts future environmental and social incidents at the firm. They also find that votes in support of these proposals are related to firm value. Differing from prior studies, we focus on the number of shareholder proposals, which we argue effectively capture shareholder concerns and results in significant impacts on board and CEO tenure.

2. Public Sentiment and Shareholder Proposals

2.1 Public Sentiment

Public sentiment has the ability to play a significant role in shaping a company's policies, actions, and outcomes. Given that information spreads rapidly through social media and other digital platforms, the public's perceptions of a company can change almost instantaneously. Further, companies may be highly sensitive to public opinion because it can affect their brand image, customer loyalty, and ultimately their bottom line. Positive public sentiment potentially leads to greater customer and employee retention, increased sales, increased productivity, and higher stock prices. Conversely, negative sentiment could result in boycotts, lower employee morale and productivity, reduced sales, and lower stock prices. As a result, companies may adjust their policies and actions to align with the public's expectations and mitigate potential backlash. The retailer Target is an example of a firm that received severe backlash in 2023 with customers boycotting its products, resulting in immediate changes to the company's product offerings. The firm had five shareholder proposals in the subsequent 2024 proxy season as compared to one in the previous year.

Public sentiment can also influence regulatory scrutiny and political pressure. When strong public opinions exist about a company's products or practices, it can prompt lawmakers and

regulators to act. For instance, widespread concern over product safety or labor conditions can lead to new investigations or regulations. To avoid such outcomes, companies may proactively adopt policies that address these concerns. This alignment with public opinion not only helps companies maintain a positive image but also supports their long-term viability in terms of a license to operate from society.

2.2 Shareholder Proposals

Shareholder-sponsored proposals are precatory, serving as non-binding recommendations to a company's board. Thus, in concept, and often in practice, a firm's board and management can ignore the voting outcome, even if the proposal receives majority approval. However, the primary objective of the proposal's proponent may extend beyond securing a favorable vote. The proposal itself can serve as a communication tool to convey concerns and priorities to management, shareholders, and other stakeholders. The underlying intent may be to highlight specific issues and exert sufficient influence to drive change within the firm over time. Importantly, given the heightened public and investor focus on shareholder proposals, their influence is not always contingent on obtaining majority support. Evidence of this broader intent is seen in the common practice of the withdrawal of proposals before the vote because the proponents reach agreement with management. For example, in 2024, AFL-CIO trusts filed shareholder proposals requesting greater transparency regarding the use of AI at a number of companies including Apple, Comcast, Disney, Netflix and Warner Bros. Notably, AFL-CIO withdrew its proposals at Comcast and Disney after securing commitments from the firms to improve disclosure on their AI practices.

The inclusion of shareholder proposals on proxy ballots, along with the outcomes of the shareholder votes, can produce indirect consequences for firms, even when the proposals fail to pass. For example, one potential outcome is the triggering of a regulatory response in which

Congress enacts new legislation or the SEC implements updated rules that govern corporate conduct. Such regulatory changes can impose significant costs on firms either through increased constraints or higher compliance costs. A prime example of these types of effects is the say-on-pay provisions of the Dodd-Frank Act, which were enacted a few years after many similar shareholder proposals started appearing on proxy ballots. In this context, the function of shareholder proposals is conceptually aligned with the role of divestment campaigns as discussed by Becht, Pajuste, and Toniolo (2023). Specifically, these authors argue that the goal of divestment campaigns is not necessarily to alter a firm's cost of capital as a mechanism of exerting pressure. Instead, these campaigns gain prominence by drawing public attention to specific issues, which in turn generates broader public pressure on firms to enact changes. Similarly, shareholder proposals, even in the absence of majority approval, can attract attention to the issue, resulting in wider public pressure on companies to make changes.

3. Data and Descriptive Statistics

3.1 Public Sentiment

We obtain firm-level data on public sentiment from the LSEG MarketPsych Analytics database. MarketPsych digitizes meanings and sentiments into machine readable values and signals based on textual analysis of around 1,000 global financial social media sites, 2,000 top global business news outlets, as well as 3,000 additional ESG-specific sources (both news and social media).[4] The database's ESG Analytics scores include more than 100 ESG metrics such as

[4] The MarketPsych database encompasses media sources dating back to 1998. With the evolution of social media platforms, the database has incrementally incorporated this newer content. The social media coverage began with Internet forums and message boards, followed by the inclusion of LexisNexis social media content in 2008, and tweets data in 2009

workplace sentiment and carbon emissions improvement as well as other controversies including tax fraud and industrial accidents.

The MarketPsych database, which uses machine learning tools to extract and analyze both traditional news and social media sources, captures public sentiment for individual firms on a daily or even minute-by-minute basis. The database allows us to measure sentiment across various dimensions, including financial, governance, environmental, and social issues.[5]

MarketPsych measures public sentiment on a specific issue – such as emissions – by aggregating positive references to the firm's emissions on a given day, subtracting negative references to the same issue on the same day, and normalizing the net result by the total number of references to the firm's emissions during that day. This approach provides a standardized measure of sentiment directly tied to firm-specific public discourse. For example, suppose that across all traditional news and social media sources on a given day, Apple Inc., , has the following references about emissions: 1) "Apple is going carbon-neutral", a positive reference on emissions issues; 2) "Apple emits too much CO2", a negative reference; and 3) "Apple will decrease CO2 emissions through employing renewable energy at its campuses", another positive reference. Then the database will record a sentiment score of (1-1+1)/(1+1+1) = 0.333 for Apple on the Emissions category for that day. The database will also record the total references to emissions, 3 in this case, as the total "buzz" on the Emissions category for Apple Inc.

The MarketPsych database includes social media sources, making it more comprehensive than earlier sentiment databases, which relied solely on traditional news sources (such as RavenPack (e.g., Dang, Moshirian, and Zhang (2015)) and TruValue Lab (e.g., Leung et al. (2023), Li, Watts, and Zhu (2024)). This raises an empirical question, which we address: do social media sources

[5] The dataset also contains subcategories for E, S and G. To keep our analyses manageable, we focus on the sentiment measures on the broader categories of financial, E, S, and G topics.

contribute informative content? To address this question, we examine public sentiment from both news and social media sources analyzing them together as well as separately.

MarketPsych measures public sentiment on both financial and non-financial issues. For financial sentiment, it applies its algorithm on the global business and investment news alongside social media sources, generating a comprehensive measure for each firm. For non-financial sentiment, the algorithm includes this plus specialized content on governance, environmental and social topics from ESG-focused news providers, watchdog groups, NGOs, and other monitors. By identifying specific keywords within this broader set of sources, the algorithm produces distinct sentiment measures for environmental, social and governance topics, separate from the financial sentiment measures.

To construct an overall ESG sentiment measure, we aggregate the individual E, S, and G sentiment measures using a weighted average, where the weights are industry-specific, and provided by the MarketPsych database administrator.[6] For category-specific sentiment measures – E, S, or G – we aggregate sentiment scores for the corresponding subcomponents, weighting them by their respective buzz measures. For example, we calculate the E sentiment measure as a weighted average of its subcomponents (Emissions sentiment, Resource Use sentiment, and Environment Innovation sentiment), weights derived from the associated Emissions buzz, Resource Use buzz, and Environmental Innovation buzz. These subcategory buzz and sentiment measures are obtained directly from the MarketPsych database.

Finally, we construct monthly sentiment measures for each firm by aggregating daily sentiment scores using a weighted average, where the weights are based on the corresponding daily buzz

[6] We employ industry weights here (as opposed to using the buzz metrics as weights), because it follows the convention among ESG ratings providers to adjust for industry in the weighting. In addition, MarketPsych recommends using industry weights to aggregate big categories like E, S, and G into one single score.

values. As previously mentioned, the buzz metric reflects the total references to a firm's specific topic. Aggregating by the buzz measure ensures consistency in sentiment measurement across different time periods. Moreover, scaling and weighting by the buzz metric confines the sentiment scores within a range of -1 to 1.

3.2 Shareholder Proposals Characteristics

We obtain proxy voting records for all firms in the Russell 3000 Index from the ISS Voting Analytics dataset.[7] The database, which has been tracking the voting records of shareholder proposals since 2003, includes in these records the meeting date, a description of each proposal, whether it is defined as a management or shareholder proposal, the identity of the proponent (person or organization), and whether the proposal was voted on or withdrawn. The voting record also includes the board's voting recommendations as well as the proxy advisory firm, ISS, the number of outstanding shares, and the number of shares voted for, against or abstain on the proposal. Typically, the board recommends voting against the shareholder proposals included on the ballot.

Matched to the voting records, ISS also classifies the shareholder proposals into E, S, or G subcategories. We classify a proposal as an E proposal if its subcategory is "Environmental Proposal", and as an S proposal if its subcategory is "Social Proposal". When E and S are not separable, i.e., the subcategory is "E&S proposal", we record it as an inseparable E&S proposal. Any other shareholder proposal is considered a G proposal. We also include management proposals on director elections.

[7] https://wrds-www.wharton.upenn.edu/pages/get-data/institutional-shareholder-services-iss/voting-analytics/company-vote-results-us/

For each subcategory (E, S, E&S, G), we calculate the number of shareholder proposals per firm year. For the director elections we calculate the average support rate in that firm year. The primary dependent variable in our analysis is the annual count of shareholder proposals appearing on the proxy statement ballot for each firm. By focusing on this measure, we are able to include all firms in the test sample, irrespective of whether they have any shareholder proposals. For firm-years with no proposals in a given category, the count is recorded as zero. While prior studies focus on the average voting support rate for a proposal, we do not adopt this approach because more than 85% of firm-years in our sample lack shareholder proposals. Relying on the average support rate would significantly reduce the sample size by 85% and introduce selection concerns.

Also in contrast to previous studies of proxy proposals (e.g., Cai, Garner, and Walkling, 2009; Aggarwal, Dahiya, and Prabhala, 2019), we do not include a control for the recommendation of a proxy advisor for three reasons. First, our primary analyses include firms without shareholder proposals and a proxy advisor recommendation cannot exist in the absence of a shareholder proposal. In addition, our analysis is conducted at the firm level rather than the proposal level, and proxy advisor recommendations are at the proposal level. Moreover, proxy advisor recommendations only become available after the shareholders decide whether to submit a proposal, that is, after the count of shareholder proposals is determined.

3.3 Sample formation and other datasets

Our sample includes all firm-years with at least one record in the ISS voting database, covering shareholder meetings held between January 2003 and December 2021 (the latest available meeting as per data downloaded in November 2022). We aggregate the ISS voting dataset from the proposal level to the firm-year level, retaining the average support rate and the count of proposals for each firm-year across different categories (E, S, E&S, and G). Additionally, we analyze management-

sponsored director election proposals as almost every firm includes these on the ballot annually, enabling analysis across all firms in the sample.

We then merge the firm-year panel with the sentiment variables obtained from the MarketPsych database, which are measured over the twelve months leading up to each firm's shareholder meeting date. This merger yields our primary sample, comprising 4,849 unique firms with complete voting records and public sentiment data for the 2003-2021 period.

To reduce noise, we exclude firms with a total buzz – a proxy for total media attention – below the 25th percentile in the cross-section for each year. This procedure ensures that sentiment measures are not unduly influenced by low-precision estimates arising from minimal media coverage.[8] After this refinement, the final sample consists of 4,063 unique firms over the 2003-2021 period.

As control variables, we obtain firm-specific characteristics from Compustat as well as CRSP. These variables include (measured as of the fiscal year-end preceding the annual shareholder meeting date): natural logarithm of total assets in millions of U.S. dollars (*ln(Assets)*), capital expenditures to total assets (*CAPEX/Assets*), return on assets (*ROA*), book leverage (*Debt/Assets*), institutional ownership percentage (*Inst. Ownership*), and institutional ownership concentration (*Inst. Ownership HHI*). In addition, we control for a firm's annual stock return minus the value-weighted stock market return (*Excess Return*), measured over the 12-month window preceding the firm's shareholder meeting month. We require that firms have non-missing accounting and stock return data for the fiscal year-end preceding the annual shareholders meeting date and we winsorize all ratio variables at the 1st and 99th percentiles, to remove the effect of outliers.

[8] As discussed in a later section the Wells Fargo example illustrates how sentiment measures can become volatile when the associated buzz levels are low.

We conduct several robustness tests in which we include additional variables For example, we do so with Entrenchment Index (Bebchuk, Cohen, and Ferrell (2009)), though this is not in our baseline set of control variables because this index is only available for 60% of our sample. We find that our main results remain qualitatively unchanged when controlling for the entrenchment index as well as additional variables like sales growth and market to book ratio.

Finally, for identification purposes (as detailed later), we collect the incidences of a firm having a scandal movie released during our sample period. Jiang et al. (2024) identified 23 movies released in North America between 1999 and 2020 that re-exposed past scandals of various companies. (We term them scandal movies for short.) We merge this list of movies to our sample, by creating an indicator equaling one for firm-years with a scandal movie released within two years before the firm's shareholder meeting and zero otherwise. This indicator variable serves as our instrument for public sentiment in a two-stage least square analysis of the effect of public sentiment on shareholder voting outcomes. Since a movie often exposed scandals related to multiple firms, we have 34 unique firms affected by a scandal movie in our sample.

3.4 Descriptive Statistics

Table 1 provides descriptive statistics on the sentiment measures, which are illustrated in Figure 1, Panels A and B. As shown in Figure 1, Panel A, both financial sentiment and ESG sentiment measures demonstrate an upward trend over the sample period. Among the ESG categories, the E category has the highest positive sentiment followed by S and then G. While the overall trend in sentiment is rising across all ESG categories, the G category experienced a temporary decline in 2017 and 2018, as depicted in Figure 1, Panel B. Although the average sentiment across all firms in the sample remains relatively stable, there exists notable volatility in sentiment at the individual firm and industry levels, as well as significant differences in sentiment

across industries. We show examples of these differences in Figure 2 and 3 which illustrate average sentiment for the oil and gas industry and the banking industry respectively. These two figures show that banks tend to have high environmental sentiment scores while oil and gas firms tend to have low environmental scores, particularly relative to their scores on social and governance sentiment. Social sentiment is higher than environmental and governance sentiment for oil and gas while environment sentiment is higher than social and governance for banking.

Panels A to C of Figure 4 provide examples of time trends in sentiment for three individual companies (Exxon, Tesla, and Wells Fargo). As could be expected, firm-level sentiment exhibits more volatility than what we observe at the industry level. Further, the Panels show periods of negative sentiment. Exxon's environmental sentiment sharply declines during periods of particular negative news such as the BP Deepwater Horizon spill in 2010. Similarly, Wells Fargo's governance sentiment sharply drops in 2016 following revelations of fraudulent sales by its employees. In contrast, Tesla's environmental sentiment level stays consistently high throughout the sample period. Tesla's social and governance sentiment levels remain relatively stable although they show a decreasing trend towards zero or negative values in more recent years.

A particularly volatile pattern can be observed in Wells Fargo's environmental sentiment. This volatility arises from the limited relevance of environmental issues to the firm's business model, resulting in little media coverage on the topic – fewer than 100 mentions across thousands of sources over the sample period. Such limited media attention (referred to as buzz) leads to a small denominator in the sentiment calculation, which creates larger volatility in the measure. To address this issue, as explained earlier, we exclude firms with very low media attention on that topic.

We also present descriptive statistics on the shareholder proposal counts and voting outcomes in Table 1 Panel A. The volatility of the shareholder proposal counts appears large compared to

the mean and this volatility is also demonstrated in Figure 5 Panels A and B, which illustrate the changes in these counts over the sample period. Particularly notable is the increase in the total number of ESG shareholder proposals during the 2004-2009 period, followed by a decline over the remainder of the sample period. As Figure 5 Panel B demonstrates, the largest number of shareholder proposals concern governance issues. Further the governance-related proposals account for the large increase and subsequent decline in the total ESG shareholder proposals depicted in Figure 5, Panel A. This pattern is attributable to the changes in shareholder-submitted say-on-pay proposals, which became required management-sponsored proposals in 2010 after passage of the Dodd-Frank Act.

Figure 6 Panels A, B and C illustrate the changes in shareholder proposal counts for the three example firms, Exxon, Wells Fargo and Tesla. For each of these example firms there exist frequent changes in the number of shareholder proposals over the sample period. For instance, in the case of Exxon the number of ESG-related shareholders proposals varies from a low of 3 in 2018 to a high of 26 in 2021, driven by the governance proposals (the proxy fight at Exxon led by activist investor Engine #1 with the support of large investors occurred in 2021). There exists variation in the number of proposals on all three dimensions, E, S, and G for the three firms. The number of shareholder proposals ranges from a high of six to a low of two in several years in the case of Wells Fargo. However, there are no proposals related to the environment throughout our sample period for the bank, which is consistent with our measurement of Wells Fargo's environmental sentiment.

Table 1 Panel A shows that, on average, the support rate for shareholder proposals for all firms is 36.7% compared to 92.6% for management-sponsored proposals. However, as previously discussed, the inclusion of shareholder proposals on the proxy ballot raises awareness of the

associated issues. Further, proxy advisory firms closely monitor proposals that achieve around 30% support or more and they expect management to address the shareholders' concerns even in the absence of a majority vote. Among management-sponsored proposals, those related to director elections receive higher levels of shareholder support as compared to management proposals unrelated to director elections. Table 1 Panel B provides the correlations between the sentiment measures and the shareholder proposal counts, which shows a 0.55 correlation between the financial and ESG sentiment measures for firms as well as some high correlations between some of the sentiment measures.

Table 1 Panel A also reports descriptive statistics for the firm characteristics that are employed as control variables in our analyses. The variable definitions are given in Appendix A. We present the correlations between the sentiment measures and these characteristics in Table 1 Panel C.

4. Public Sentiment and Shareholder Proposals

4.1 Public Sentiment and Shareholder Proposals Count

To test for the relation between the decision of shareholders to submit proposals to a firm's proxy statement and public sentiment about that firm, we run the following estimation at the firm-year level:

$$ShareholderProposalCount_{i,t} = \beta_0 + \beta_1 \cdot Sentiment_{i,t} + \Gamma \cdot X_{it} + \mu_i + \vartheta_{jt} + \varepsilon_{it}, \qquad (1)$$

where *i* indexes the firm, *t* indexes the year, and *j* indexes the industry of the firm. The dependent variable is the number of shareholder proposals submitted to a firm's proxy statement in a given year.[9] The primary independent variables are the sentiment measures, which consist of the

[9] In the primary specification we only include the count of the shareholder proposals on the proxy ballot. In later robustness tests we also include the number of omitted and withdrawn proposals (where the sample is smaller due to data limitations).

financial sentiment measure, the ESG sentiment measure and the components of the latter. To account for the count nature of the dependent variable, we employ a Poisson regression model. The unit of observation is firm-year and standard errors are corrected for clustering of observations at the firm level.

In each regression specification, we include controls for various firm characteristics – i.e., natural logarithm of total assets, debt to assets, cash holdings to assets, return on assets (ROA), capital expenditures (CAPEX) to assets, annual stock return minus the value-weighted stock market return (Excess Return) in addition to institutional ownership and its concentration (Herfindahl-Hirschman Index of institutional ownership). The firm characteristics are measured using data within a one-year window leading up to the shareholder meeting date. We winsorize the firm characteristic variables (except log assets) at the upper and lower 1% levels. We further standardize the independent variables to have a mean of zero and a standard deviation of one. The sample is restricted to firm-years that have at least some shareholder voting data, and a total media attention (news and social media buzz) above the 25th percentile in the cross-section of firms in each year.

We present the results from Equation (1) in Table 3, where Columns (1)-(3) include industry-by-year fixed effects and Columns (4) to (6) include firm and year fixed effects. In the regressions with ESG sentiment as the primary independent variable (Columns (1), (2), (4) and (5)) the coefficient on ESG sentiment is negative and statistically significant, which suggests that shareholders are more likely to submit proposals when public perceptions of a firm's ESG profile are relatively unfavorable. The economic magnitude of this effect is large as a one standard deviation decrease in the ESG sentiment is associated with a 0.26 higher shareholder proposal count – which is equivalent to over 150% of the sample mean (0.26/0.17). Importantly, the

coefficient on the ESG sentiment measure remains negative and statistically significant when we include the financial sentiment measure in Column 2. This specification shows that financial sentiment is also important, with a one standard deviation decrease in this sentiment measure leading to 0.23 unit increase in the shareholder proposal count. We find similar results using firm and year fixed effects as demonstrated in columns 4 and 5. However, these alternate specifications impose greater restrictions by controlling for within-firm factors constant over time as well as cross-firm factors within a given year. Importantly, firm (year) fixed effects mitigate concerns regarding omitted variable bias as they control for unobserved heterogeneity specific to individual firms (time periods). In other words, both the ESG sentiment and the financial sentiment retain statistical significance, even when the identification stems solely from intra-firm variation.

In Columns 3 and 6, we disentangle the individual effects of E, S, and G sentiments and find that all load significantly with firm-year fixed effects, with the results being marginally significant for the E sentiment but stronger and significantly negative for the S and G sentiments.

In Tables 4 and 5, we examine whether the count of E and S shareholder proposals and the G shareholder proposals independently relate to the E, S and G sentiment measures. Table 4 shows that when the dependent variable is the count of E and S shareholder proposals, the coefficient on the aggregate ESG sentiment measure is significantly negative, suggesting that these sentiments are associated with shareholder decisions to submit proposals. The financial sentiment measure similarly exhibits a significantly negative association in Column (2) with the industry year fixed effects, implying that shareholder actions are also influenced by the firm's financial performance. However, the financial sentiment coefficient loses significance in the firm year fixed effects model shown in Column (4). Moreover, the coefficients for the disaggregated E and S sentiments are (marginally) significantly negative, but the G sentiment loses its significance entirely. These

findings suggest that the E and S sentiments play a role in explaining the number of E and S shareholder proposals included in proxy statements, while the firm's governance sentiment appears to have no effect on the submission of E and S proposals.

In Table 5 we focus the analysis on the count of governance-related shareholder proposals as the dependent variable. Across most specifications, the coefficient on ESG sentiment remains significantly negative, suggesting public concerns about a firm's ESG practices lead shareholders to submit a greater number of governance-related shareholder proposals. Consistent with the results observed in Table 4, the G sentiment measure exhibits significantly negative coefficients in both specifications while the coefficients on the E and S sentiment measures largely lose their significance. These findings provide support for the validity of our measures of public sentiment, which effectively capture distinct aspects of the firm's overall E, S, and G practices.

A key question arising from the analysis is the relative importance of sentiment measures derived from traditional news media versus those from social media. Given the increasing influence of social media in recent years, it is plausible that social media sentiments may play a meaningful role. However, for institutional investors, who dominate the shareholder base of most publicly listed companies, traditional news outlets may still serve as the primary source of information. We examine this distinction in Table 6 by separately estimating results based on sentiment derived from traditional news media (Panel A) and social media (Panel B). The findings in Panel A show that sentiment measures from traditional media exhibit strong associations with the count of shareholder proposals. In fact, the ESG sentiment, financial sentiment, and the disaggregated E, S, and G sentiments are all significantly related to the number of shareholder proposals. A comparison of these coefficients with those from Table 3 suggests similar magnitudes but notably stronger statistical significance. Comparing Panel B with Panel A indicates that

sentiment measures from both traditional news media and social media appear to be important influences on the number of shareholder proposals, consistent with the results in Table 3. The larger and more significant coefficients we observe for the traditional news-based sentiment measures imply that traditional media remains the more influential channel for reflecting public sentiments regarding publicly traded firms.

We extend the analysis of the relationship between the count of shareholder proposals and public sentiment to consider all submitted shareholder proposals. That is, we include the withdrawn and omitted proposals in the testing sample, in comparison to our previous analyses which only include proposals that proceed to a final vote. Proposals are typically withdrawn when an agreement is reached between management and the proposal's sponsor, which indicates that the shareholder concerns have been addressed to some extent. Additionally, during our sample period shareholder proposals could be omitted from the ballot if the SEC approved a "no action" request from the company, indicating that these proposals were deemed unsuitable for the proxy ballot. Thus, with both the withdrawn and omitted proposals we may expect a weaker relationship between the number of shareholder proposals and public sentiment. Due to data limitations, this analysis focuses on the S&P 1500 index. As shown in the Internet Appendix Table IA3, the relationship between the number of shareholder proposals and public sentiment is much stronger for the group of firms where the proposals are not withdrawn or omitted and proceed to a final vote. Nonetheless, the core findings remain robust when we focus on the number of all shareholder proposals submitted to a firm in a year.

4.2 Consequences of Shareholder Proposals

In this section we consider the validity of our count of shareholder proposals as a measure of shareholder dissatisfaction by examining whether this metric is associated with consequences for a firm's CEO and directors. We run the following regression on firm years:

$$Consequences_{i,t} = \beta_0 + \beta_1 \cdot ShareholderProposalCount_{i,t} + \Gamma \cdot X_{it} + \mu_i + \vartheta_{jt} + \varepsilon_{it}, (2)$$

where *i* indexes the firm, *t* indexes the year, and *j* indexes the industry of the firm. The dependent variable is one of the three consequences we examine: forced CEO turnover, director turnover or voting support in the director elections. The primary independent variable is the number of shareholder proposals submitted to a firm's proxy statement in a given year. We again control for firm characteristics, and the unit of observation is firm-year and standard errors are corrected for clustering of observations at the firm level.

Table 7 reports the results from these analyses. The sample is larger as we no longer need to restrict to firm-years with sufficient media coverage as this test does not employ the sentiment measures.[10] Columns 1, 3 and 5 of the table reports results with industry-year fixed effects and alternatively the models used in columns 2, 4 and 6 employ firm and year fixed effects. Columns (1) and (2) show the results from testing for an association between forced CEO turnover and shareholder dissent as captured by the number of shareholder proposals. We find that more shareholder dissent is associated with a greater likelihood of CEO turnover and the the economic magnitude is large – one additional shareholder proposal is associated with an 18.6% higher rate of forced CEO turnover relative to the sample mean.

[10] Results are similar when we impose the restriction of sufficient media attention as in previous tests. In addition, the results are also similar if we control for financial sentiment in every regression specification.

Table 7 Columns (3) and (4) present the results from Equation (2) where director turnover is the consequence – the dependent variable, where director turnover refers to the percentage of directors that left a firm during a particular year. We find a strong relationship between director turnover and the count of shareholder proposals. In each specification the coefficient of the number of shareholder proposals is significant at the 1% level. The coefficients indicate that one additional shareholder proposal is associated with at least a 10% higher rate of director turnover relative to the sample mean.

We also employ another measure of consequence related to director turnover, whether the directors of a firm with more shareholder proposals receive less voting support during the annual director elections. The dependent variable in this case is average support for directors at a firm in a particular year. As reported in Columns 5 and 6 of Table 7, more shareholder proposals on the ballot are significantly associated with directors at the firm receiving more dissent votes. The coefficients indicate that one additional shareholder proposal is associated with a 7 to 9% standard deviation lower vote in the support rate of directors.[11] These results on director elections are consistent with the findings of He, Kahraman, and Lowry (2023) where we use a different proxy for shareholder dissent. Even if shareholder proposals don't pass, just the mere presence of an additional shareholder proposal has a disciplining effect on the firm's CEO and board of directors.

4.3 Voting Outcomes

We additionally investigate the relationship between public sentiment and the voting outcome of shareholder proposals. As pointed out earlier, we do not focus on this relationship because the voting outcomes on shareholder proposals are only available on a small subset of firm-years –

[11] We interpret the economic magnitude of the effect on director election support relative to sample standard deviation as opposed to sample mean because the literature has documented that the average support rate for director is generally high (above 90%) but the variation (standard deviation) is still meaningful in capturing shareholder dissent.

those that have at least one shareholder proposal being voted. The small subset also implies that the voting outcomes could be affected by selection concerns and the outcome remains undefined when a firm does not have any shareholder proposals in a year. Further, it is possible that proposals with a very high probability of passing or a very low probability of passing are already privately negotiated between shareholders and managers, which would leave only relatively neutral proposals on the ballot. If so, there may not be sufficient variation in this selected subset of proposals, and we may not find any relationship between public sentiments and voting outcomes for these proposals.

We find results consistent with this hypothesis. The Internet Appendix Table IA4 shows the results when we conduct the baseline analysis when replacing the dependent variable by the average voting support for shareholder proposals in a firm-year whenever the firm has at least one proposal in that year. Across various specifications, we do not find a significant relationship between voting support for firms' shareholder proposals and public sentiments, be it ESG sentiments or financial sentiments.

For robustness, we examine voting for director elections for the entire sample of firms. Selection issues are less of a concern because director elections occur for every firm almost every year, we find significant relationships between public sentiments and voting support rates. Table 8 shows that a lower public sentiment predicts a lower support rate for director elections in a firm in a year. All the components of public sentiments, from ESG to financial sentiments, appear to matter for the director support rate in the same direction.

5. Causal inference

The relationship between the public sentiment of a firm and the number of shareholder proposals brought to the firm in a year may not be causal, if other factors, such as firm performance

and financial outcomes, simultaneously increase public sentiment about the firm and decrease the dissent and actions by the firm's shareholders. While we control for a large number of firm characteristics and performance indicators to control for this possibility and find robust results, there may still be omitted factors related to firm fundamentals. Therefore, to investigate whether the effect of public sentiment on shareholder actions is causal, we need to examine a shock to the public sentiment of a firm that is unrelated to the firm's performance.

In this section, we attempt to address causal inference by studying scandal movies as a shock to a firm's public sentiment. Jiang et al. (2024) identified 23 movies released in North America between 1999 and 2020 that re-exposed companies' past scandals, which we term "scandal movies." The idea is that while these scandal movies may bring past misconduct of a firm to the public eye and decrease the public sentiment associated with the firm, such movies do not directly affect how shareholders decide whether and how many new proposals to bring to the firm. In other words, scandal movies as a shock may satisfy both the relevance and exclusion criteria as an instrument for public sentiment on a firm. Since the nature of these movies is about past corporate misconduct, we expect them to be a relevant instrument for ESG sentiment, more so than for financial sentiment.

We identify 23 scandal movies from Jiang et al. (2024) that affected 49 firm-years in our sample. These 49 firm-years become our treated firm-years. We then match each of these firms in its treatment year with up to five control firms within the same year and industry, based on a nearest neighbor matching procedure using the following variables as matching covariates: total news, social media buzz, ESG sentiment, financial sentiment, and firm size (log assets), all measured by a one-year lag relative to the event date (the movie's wide-release date). Employing this matched sample, we then perform a two-stage least squares regression of the number of

shareholder proposals in a year on ESG sentiment measured in the last year and we instrument the ESG sentiment by the interaction between treatment and post, which equals one for firm years with a scandal movie released within the last year and zero otherwise. We additionally control for financial sentiment and the other firm characteristics used in Equation (1).[12]

Table 9 presents the results. In Panel A, the first stage regression suggests that scandal movies have a significant and negative impact on a firm's ESG sentiment. The coefficient on Treat*Post is statistically significant at the 1% level, regardless of the regression specification. Consistent with this statistical significance, the second-stage regressions (in Panel B) report first-stage F-statistics of above 19 without any control variables and above the conventional level of 10 after controlling for the firm characteristics. The only specification with an F-stat lower than 10 is the regression that includes all of the firm characteristics, which may be overly conservative.

In Panel B, the instrumented ESG sentiment appears to have a strong negative effect on the number of shareholder proposals brought to a firm. The coefficient on the instrumented ESG sentiment is significant at the 10% or 5% level, depending on the specification, and economically very large. A one standard deviation decrease in the ESG sentiment would lead to at least 1.9 more shareholder proposals in a year, which is many times larger than the sample mean. Overall, results suggest that the effect of public sentiment on shareholder actions is causal.

6. Conclusion

Our study considers the influence of public sentiment on shareholder actions, with a particular focus on the submission of shareholder proposals. We find that negative public sentiment, whether derived from the traditional news media or social media, is associated with a significant increase

[12] Without matching, the first stage and second stage results are even stronger, as shown in the Internet Appendix Table IA5.

in the number of shareholder proposals. This result suggests the extent to which public sentiment can influence shareholder behavior. By disaggregating public sentiment into its ESG and financial dimensions, we demonstrate the importance of both components in understanding the motivations behind shareholder proposals. The innovative use of scandal movies as an instrumental variable offers evidence of causality, which further strengthens our argument that negative public sentiment can directly contribute to increased shareholder dissent as reflected in the count of shareholder proposals.

Our findings contribute new evidence on the interconnections among public sentiment, media coverage, and shareholder activism. Specifically, the results emphasize the dual role of traditional news media and social media as not only sources of information, but also as platforms for public engagement, which can significantly influence the corporate governance framework. Institutional investors, as stewards of public capital, appear to integrate sentiment in their engagements with corporate leadership, aligning their actions with broader societal concerns. This study not only helps our understanding of the mechanisms underpinning shareholder activism but also highlights the importance for corporate management to cultivate a positive public image to mitigate potential shareholder conflicts.

References

Aggarwal, Reena, Sandeep Dahiya, and Umit Yilmaz, 2024, Why do investors vote against corporate directors? ECGI Finance working paper 924/2023.

Baker, Malcolm, and Jeffrey Wurgler, 2006, Investor sentiment and the cross-section of stock returns, *Journal of Finance* 61, 1645–1680.

Barko, Tamas, Martijn Cremers, and Luc Renneboog, 2021, Shareholder engagement on environmental, social, and governance performance, *Journal of Business Ethics* 180, 1–36.

Becht, Marco, Anete Pajuste, and Anna Toniolo, 2023, Voice through divestment, ECGI Finance Working Paper 900.

Bethel, Jennifer, and Stuart Gillan, 2002, The impact of the institutional regulatory environment on shareholder voting, *Financial Management* 31, 29-54.

Bolton, Patrick, Tao Li, Enrichetta Ravina, and Howard Rosenthal, 2020, Investor ideology, *Journal of Financial Economics* 137, 320–352.

Chan, Wesley S., 2003, Stock price reaction to news and no-news: Drift and reversal after headlines, *Journal of Financial Economics* 70, 223-260.

Dang, Tung Lam, Fariborz Moshirian, and Bohui Zhang, 2015, Commonality in News Around the World, *Journal of Financial Economics* 116, 82-110.

Dellavigna, Stefano, and Joshua M. Pollet, 2009, Investor inattention and Friday earnings announcements, *Journal of Finance* 64, 709-749.

DeVault, Luke, Richard Sias and Laura T. Starks, 2019, Sentiment metrics and investor demand, *Journal of Finance* 74, 985-1024.

Dougal, Casey, Joseph Engelberg, Diego Garcia, and Christopher A. Parsons, 2012, Journalists and the stock market, *Review of Financial Studies* 25, 639-679.

Dyck, Alexander, Karl V. Lins, Lukas Roth, and Hannes F. Wagner, 2019, Do institutional investors drive corporate social responsibility? International evidence, *Journal of Financial Economics* 131, 693–714.

Dyck, Alexander, Natalya Volchkova, and Luigi Zingales, 2008, The corporate governance role of the media: Evidence from Russia, *Journal of Finance* 63, 1093-1135

Engelberg, Joseph and Christopher A. Parsons, 2011, The causal impact of media in financial markets, *Journal of Finance* 66, 67-97.

Gillan, Stuart L. and Laura T. Starks, 2000, Corporate governance proposals and shareholder

activism: The role of institutional investors, *Journal of Financial Economics* 57, 275–305.

Gormley, Todd A., Vishal K. Gupta, David A. Matsa, Sandra C. Mortal, and Lukai Yang, 2023, The Big Three and board gender diversity: The effectiveness of shareholder voice, *Journal of Financial Economics* 149, 323-348.

Grossman, Sanford, and Joseph Stiglitz, 1980, On the efficiency of competitive stock markets where trades have diverse information, *Journal of Finance* 31, 573-585.

He, Yazhou, Bige Kahraman, and Michelle Lowry, 2023, ES risks and shareholder voice, Review of Financial Studies 36, 4824-4863.

Hirschman, Albert, 1971, *Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations, and States*, Harvard University Press, Cambridge, MA.

Iliev, Peter, and Michelle Lowry, 2015, Are mutual funds active voters? *Review of Financial Studies* 28, 446-485.

Jiang, Han, Le Kang, Ziye Nie, and Hui Zhou, 2024, Can old sin make new shame? Stock market reactions to the release of movies re-exposing past corporate scandals, *Finance Research Letters 67/A.*

Krueger, Philipp, Zacharias Sautner, and Laura T. Starks, 2020, The importance of climate risk for institutional investors, *Review of Financial Studies* 33, 1067–1111.

Kuhnen, Camelia M. and Alexandra Niessen, 2012, Public opinion and executive compensation, *Management Science* 58, 1249-1272.

Leung, Ming, Chuchu Liang, Ben Lourie, and Chenqi Zhu, 2023, Voting with their feet: Employee responses to ESG news, Working paper available at SSRN (4937880).

Li, Tao, S. Lakshmi Naaraayanan, and Kunal Sachdeva, 2023, Conflicting objectives of ESG funds: Evidence from proxy voting, Working paper available at SSRN (3760753).

Liu, Baixiao and John J. McConnell, 2013, The role of the media in corporate governance: Do the media influence managers' capital allocations? *Journal of Financial Economics* 110, 1-17.

Li, Qianqian, Edward Watts, and Christina Zhu, 2023, Retail investors and ESG news, *Journal of Accounting & Economics*, forthcoming.

Lowry, Michelle, Pingle Wang, and Kelsey D. Wei, 2022, Are all ESG funds created equal? Only some funds are committed. European Corporate Governance Institute–Finance Working Paper.

McCahery, Joseph A., Zacharias Sautner, and Laura T. Starks, 2016, Behind the scenes: The corporate governance preferences of institutional investors, *Journal of Finance* 71, 2905–2932.

Merton, Robert, 1987, A simple model of capital market equilibrium with incomplete information, *Journal of Finance* 42, 483-510.

Michaely, Roni, Silvina Rubio, and Irene Yi, 2023, Voting rationales. European Corporate Governance Institute – Finance Working Paper 928/2023.

Mueller, Ronald O., and Elizabeth Ising, 2017, Shareholder proposal developments during the 2017 proxy season, Harvard Law School Forum on Corporate Governance (https://corpgov.law.harvard.edu/2017/07/12/shareholder-proposal-developments-during-the-2017-proxy-season/).

Parrino, Robert, Richard Sias, and Laura Starks, 2003, Voting with their feet: institutional ownership changes around forced CEO turnover, *Journal of Financial Economics* 68, 3-46.

Solomon, David H, Eugene Soltes, and Denis Sosyura, 2014, Winners in the spotlight: Media coverage of fund holdings as a driver of flows, *Journal of Financial Economics* 113, 53-72.

Stambaugh, Robert F., Jianfeng Yu, and Yu Yuan, 2012, The short of it: Investor sentiment and anomalies, *Journal of Financial Economics* 104, 288–302.

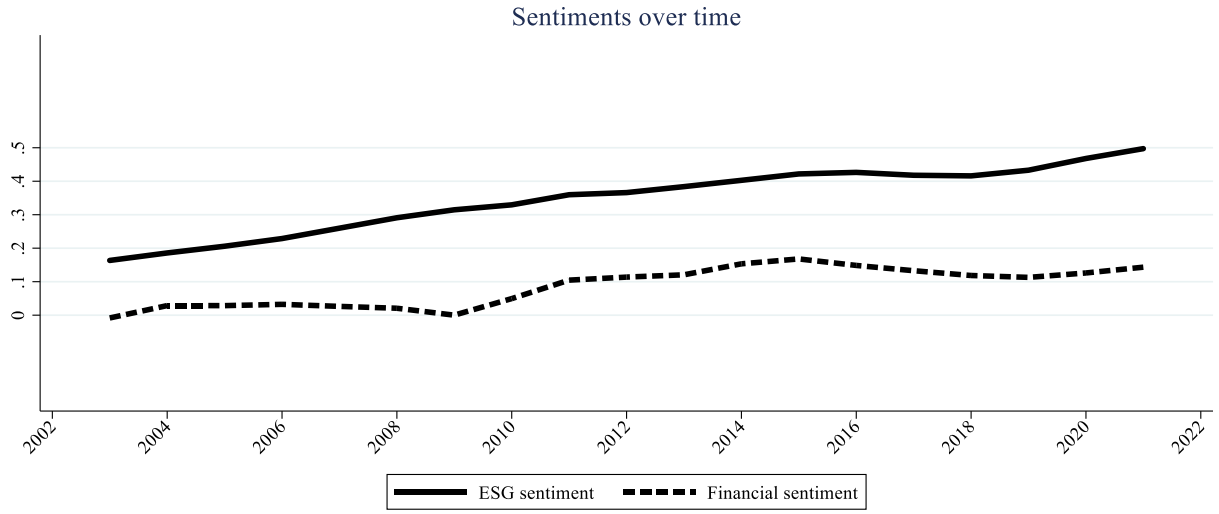
Tetlock, Paul, 2010, Does public financial news resolve asymmetric information? *Review of Financial Studies* 23, 3520-3557.

Tetlock, Paul, 2007, Giving content to investor sentiment: The role of media in the stock market, *Journal of Finance* 62, 1139-1168.

Figure 1: ESG sentiments and financial sentiments over time

Panel A graphs the ESG sentiment and financial sentiment for the average firm over time in the full sample. Panel B shows the sentiment across the average firm over time, separately for the E, S, and G categories. The sample is restricted to firm-years with at least some shareholder voting data, and a total media attention (news and social media buzz) above the 25th percentile in the cross-section of firms in each year.

Panel A: ESG sentiment vs. financial sentiment



Panel B: Components of ESG sentiment

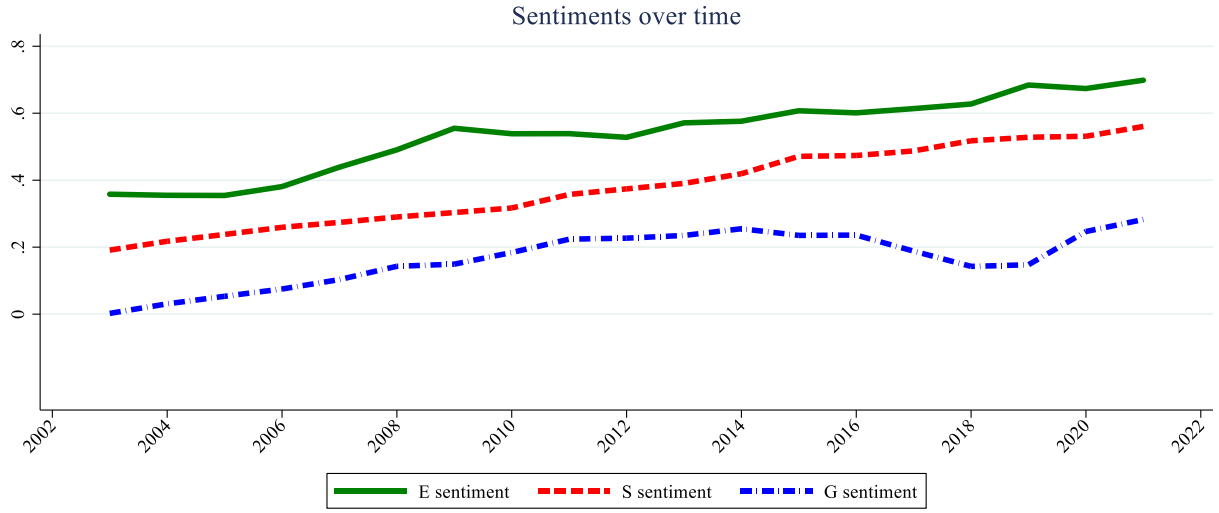
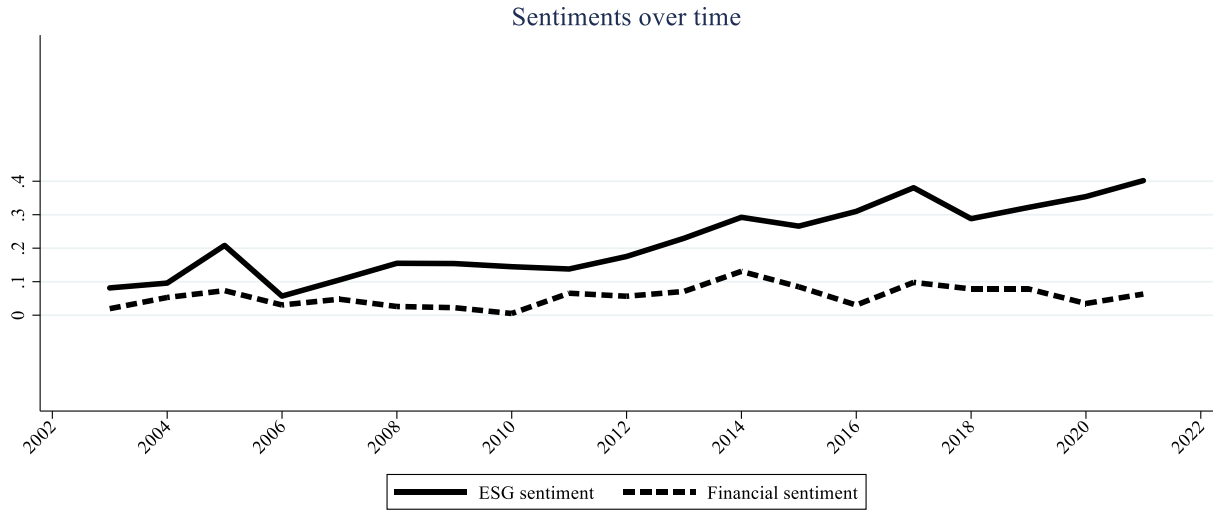


Figure 2: ESG sentiments and financial sentiments over time – Oil and gas industry

Panel A graphs the ESG sentiment and financial sentiment for the average sample firm over time in the oil and gas industry. Panel B shows the sentiment across the average sample firm in the oil and gas industry over time, separately for the E, S, and G categories. The sample is restricted to firm-years with at least some shareholder voting data, and a total media attention (news and social media buzz) above the 25th percentile in the cross-section of firms in each year.

Panel A: ESG sentiment vs. financial sentiment



Panel B: Components of ESG sentiment

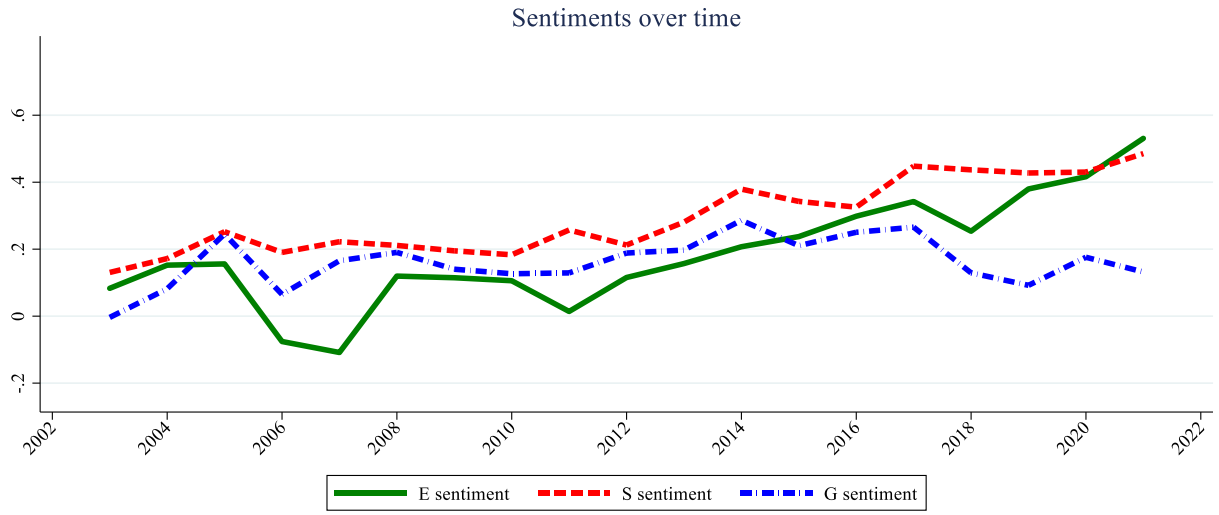
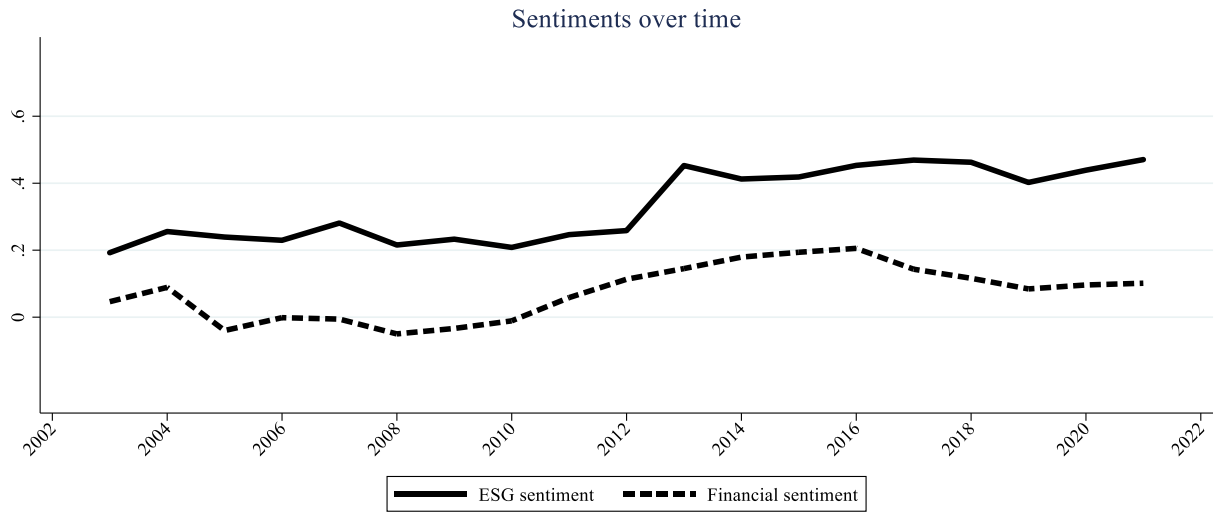


Figure 3: ESG sentiments and financial sentiments over time – Banking

Panel A graphs the ESG sentiment and financial sentiment for the average sample firm over time in the banking industry. Panel B shows the sentiment across the average banking firm over time, separately for the E, S, and G categories. The sample is restricted to firm-years with at least some shareholder voting data, and a total media attention (news and social media buzz) above the 25th percentile in the cross-section of firms in each year.

Panel A: ESG sentiment vs. financial sentiment



Panel B: Components of ESG sentiment

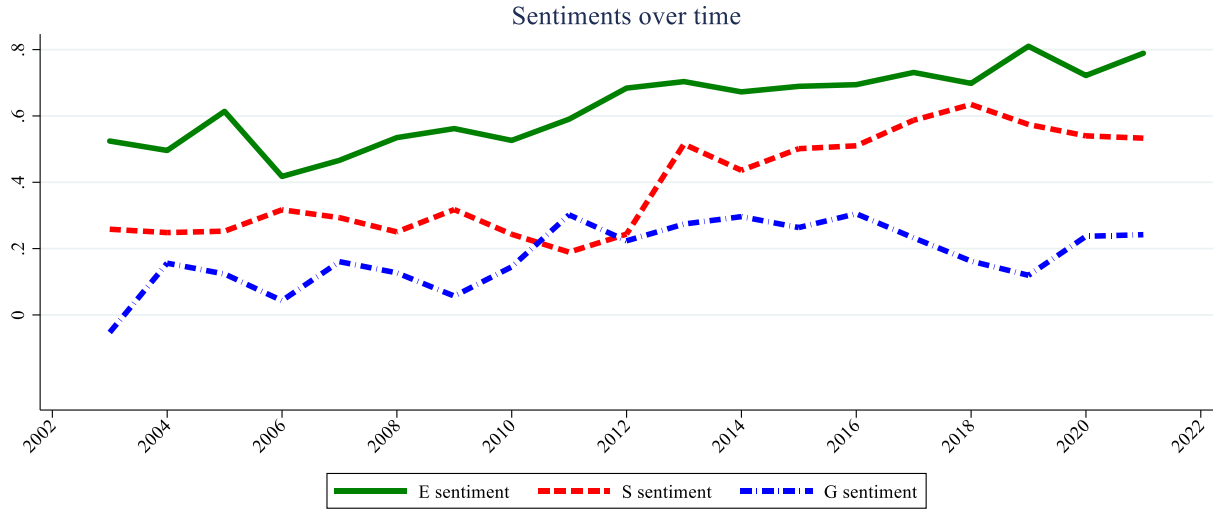
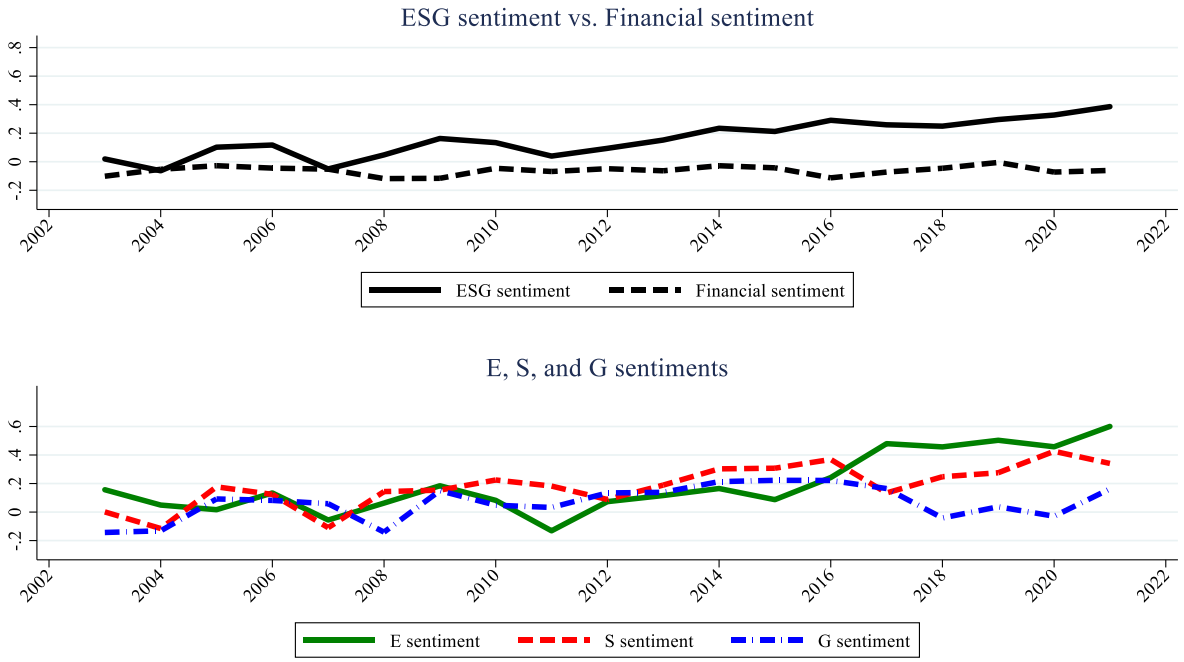


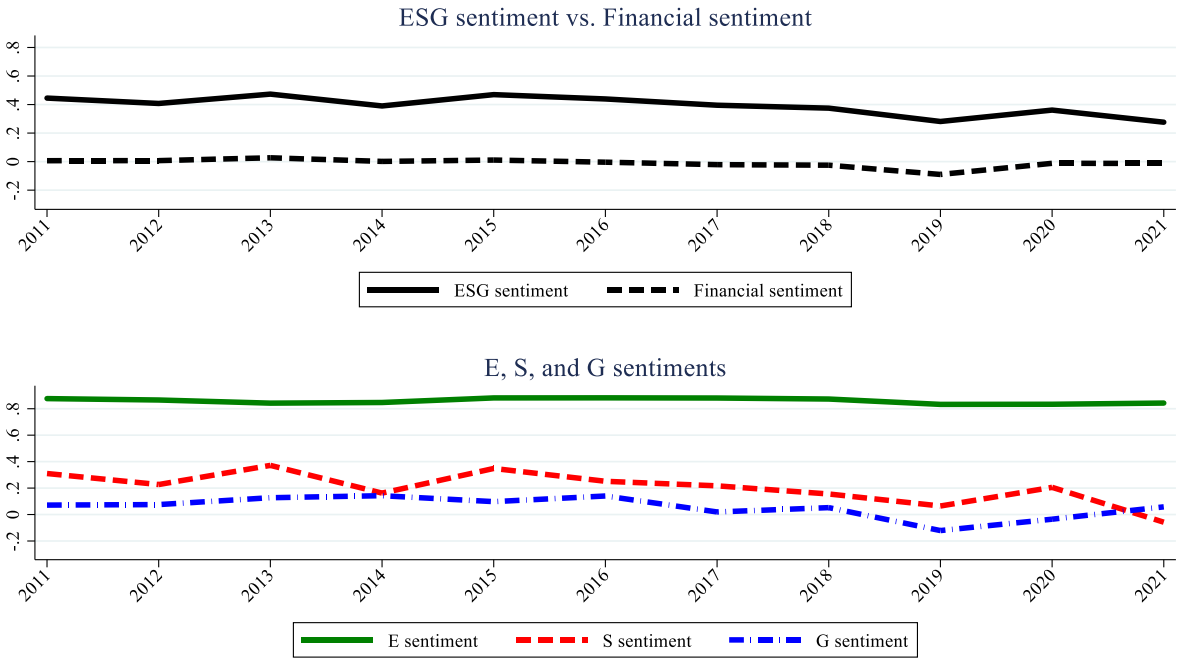
Figure 4: Examples of ESG and financial sentiments over time for individual firms

This figure graphs sentiments over time, similar to Figure 1, but for three individual firms, Exxon in Panel A, Tesla in Panel B and Wells Fargo in Panel C.

Panel A: Exxon



Panel B: Tesla



Panel C: Wells Fargo

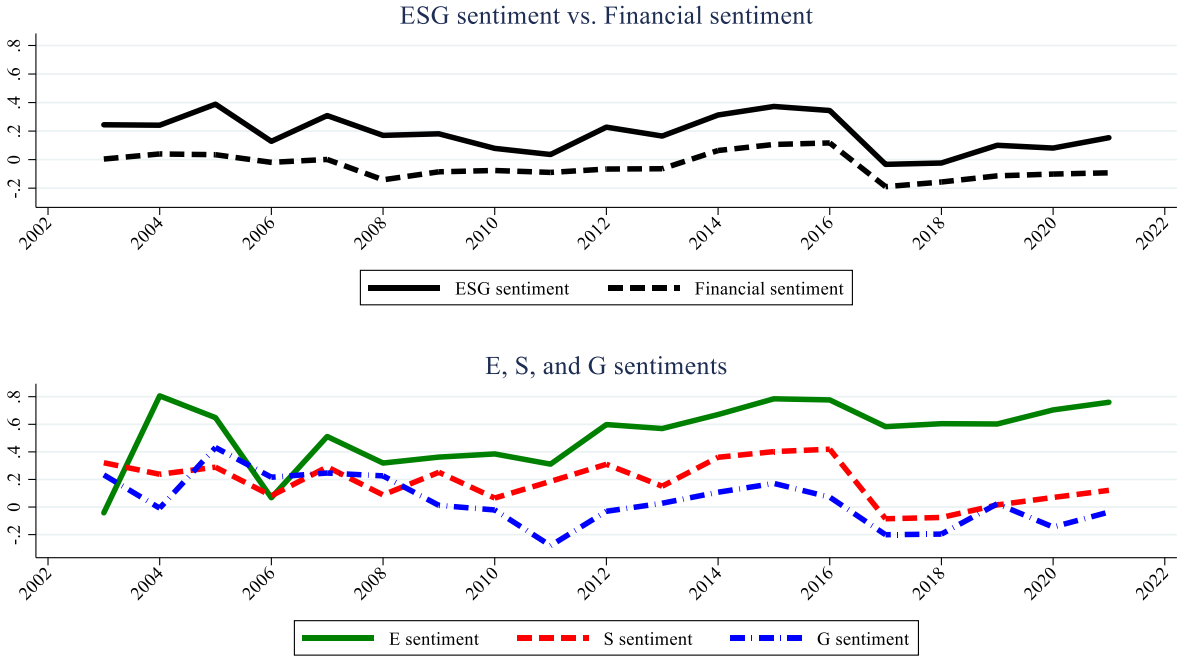


Figure 5: Count of ESG-related shareholder proposals

Panel A displays the average number of shareholder proposals across the sample firms over time. Panel B shows the average number of proposals, separately for the E, S, and G categories. In Panel B, we remove from our calculations the proposals that cannot be cleanly separated into one single category. The sample is restricted to firm-years with at least some shareholder voting data, and a total media attention (news and social media buzz) above the 25th percentile in the cross-section of firms in each year.

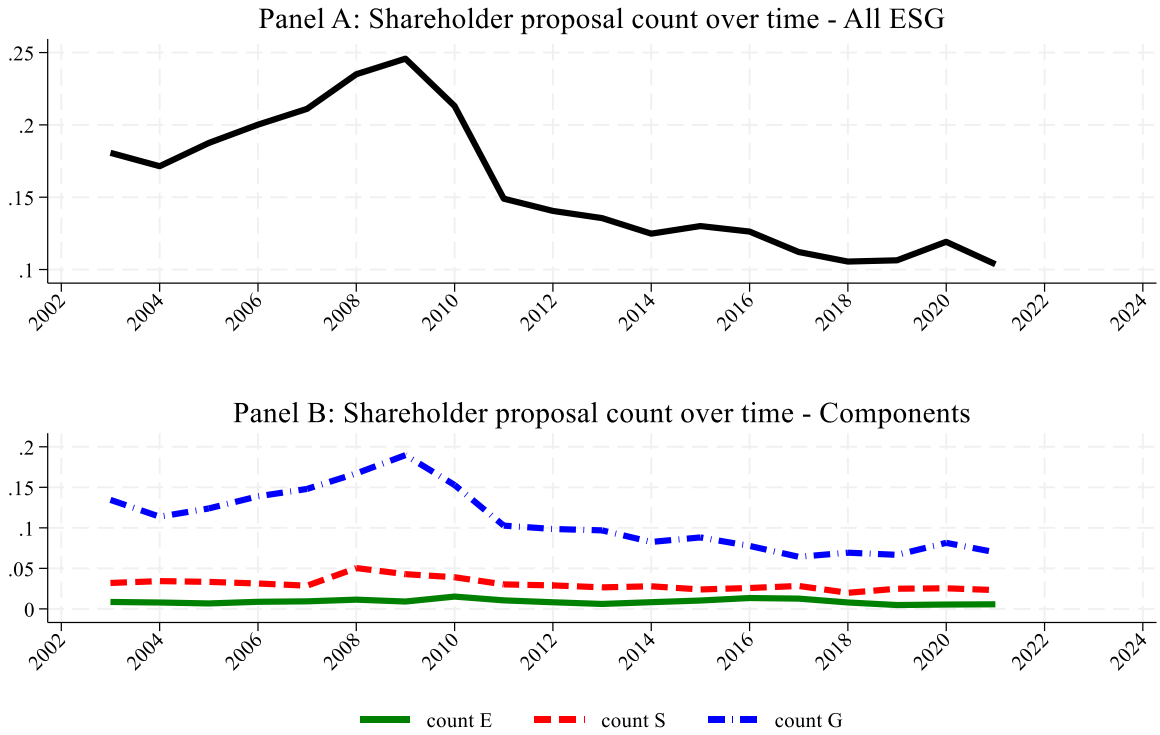
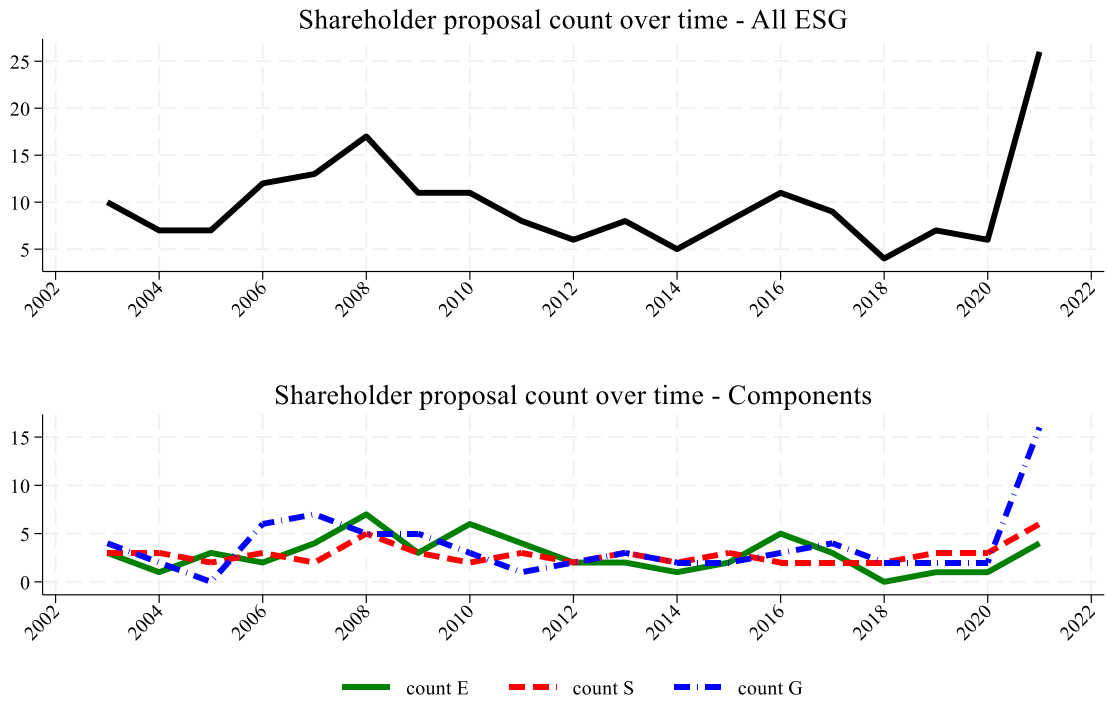


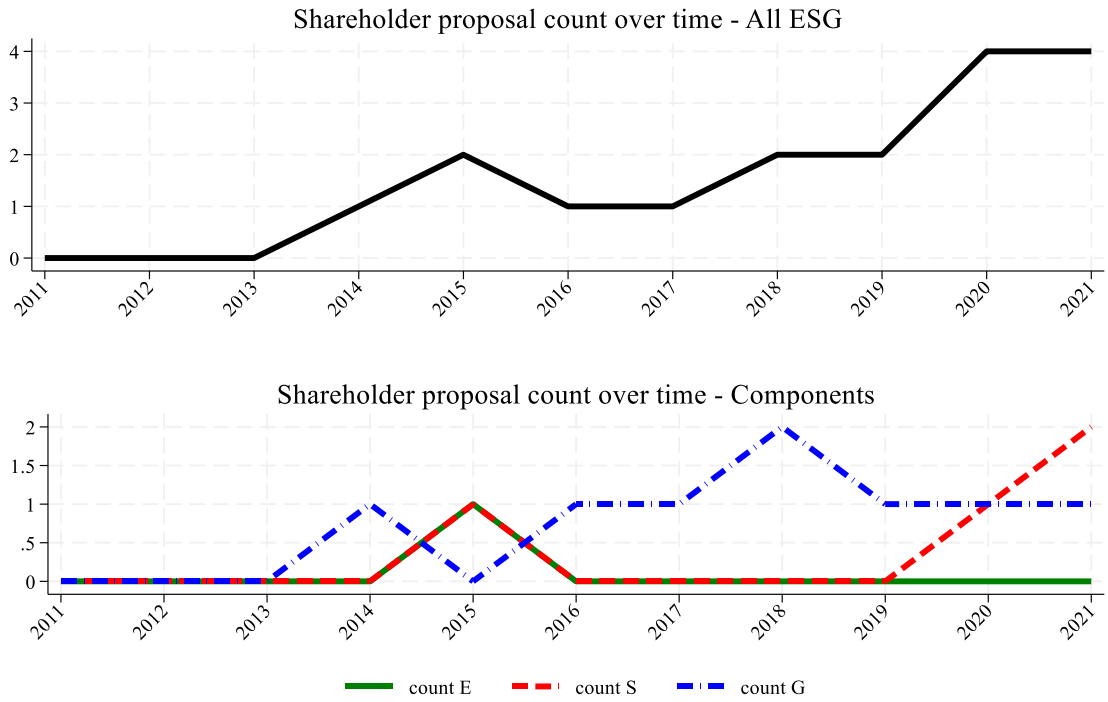
Figure 6: Examples of the count of ESG-related shareholder proposals for individual firms

This figure graphs the number of shareholder proposals for three example firms over time with Exxon in Panel A, Tesla in Panel B, and Wells Fargo in Panel C.

Panel A: Exxon



Panel B: Tesla



Panel C: Wells Fargo

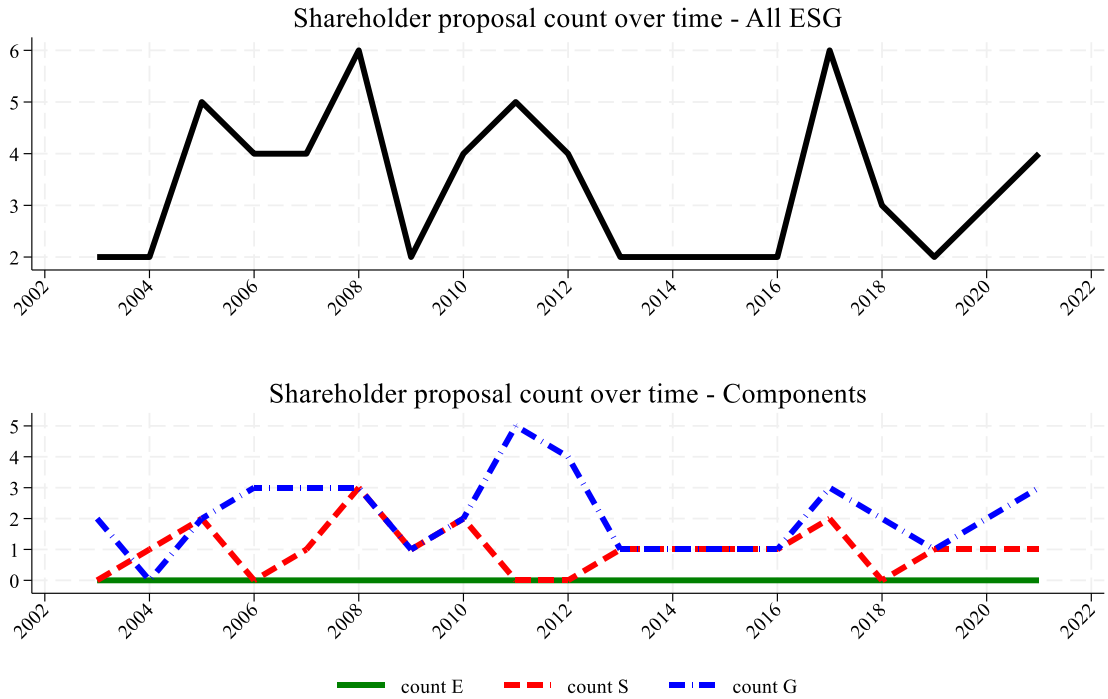


Table 1: Descriptive statistics for sentiment measures and firm characteristics

This table reports the summary statistics and correlation coefficients for the sentiment, proposal measures and firm characteristic measures. Panel A reports summary statistics for all of the measures. Panels B and C report the Pearson correlation coefficients between the sentiment measures and proposal measures and the sentiment measures and firm characteristics, respectively. All variables are defined in the Appendix. The unit of observation is firm-year. The sample is restricted to firm-years with at least some shareholder voting data, and a total media attention (news and social media buzz) above the 25th percentile in the cross-section of firms in each year.

Panel A: Summary statistics

	N	Mean	Std. Dev.	min	p10	Median	p90	max
Sentiment measures								
Financial sentiment	37463	.1	0.13	-.49	-.06	.09	.28	.78
ESG sentiment	36896	.38	0.27	-1	.03	.39	.71	1
E sentiment	35011	.57	0.47	-1	-.05	.72	1	1
S sentiment	36893	.42	0.30	-1	0	.45	.79	1
G sentiment	36633	.19	0.38	-1	-.28	.19	.67	1
Proposal measures								
Count shareholder proposals	60727	.17	0.76	0	0	0	0	27
Support shareholder proposals	5459	36.7	23.77	0	7.97	32.6	73.98	100
Support management proposals	55036	92.58	7.93	1.02	82	95.45	99.15	100
Support director elections	53196	94.31	7.67	14.55	85.69	96.98	99.75	100
Support other management proposals	52096	90.14	11.94	0	68.95	95.46	99.54	100
Firm characteristics								
Log(assets)	56052	6.89	2.13	.26	4.1	6.93	9.65	11.3
Debt/assets	49989	.23	0.24	0	0	.18	.55	1.26
Cash/assets	56049	.21	0.24	0	.01	.11	.61	.96
ROA	53585	.02	0.35	-2.19	-.24	.09	.24	.66
CAPEX/assets	55126	.05	0.07	0	0	.02	.11	.56
Excess return	54739	0	0.12	-.32	-.13	0	.13	.5
Inst. ownership	47833	.61	0.30	0	.12	.69	.96	1.02
Inst. ownership HHI	47833	.13	0.18	.01	.03	.06	.3	1
Entrenchment index	20588	3.27	0.90	0	2	3	4	6

Panel B: Correlations between sentiment measures and voting measures

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Financial sentiment	1.00								
(2) ESG sentiment	0.55	1.00							
(3) E sentiment	0.22	0.56	1.00						
(4) S sentiment	0.54	0.72	0.22	1.00					
(5) G sentiment	0.41	0.71	0.15	0.30	1.00				
(6) Count shareholder proposals	-0.13	-0.06	-0.02	-0.08	-0.03	1.00			
(7) Indicator shareholder proposals	-0.11	-0.03	-0.01	-0.06	-0.01	0.74	1.00		
(8) Support management proposals	0.04	0.05	0.02	0.01	0.06	0.03	0.05	1.00	
(9) Support director election	0.06	0.05	0.02	0.02	0.06	0.01	0.02	0.75	1.00
(10) Support other management proposals	0.01	0.03	0.01	0.01	0.03	0.01	0.01	0.71	0.16

Panel C: Correlations between sentiment measures and firm characteristics

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Financial sentiment	1.00										
(2) ESG sentiment	0.55	1.00									
(3) E sentiment	0.21	0.56	1.00								
(4) S sentiment	0.54	0.72	0.21	1.00							
(5) G sentiment	0.41	0.70	0.14	0.29	1.00						
(6) Log(assets)	-0.04	0.06	0.05	-0.02	0.07	1.00					
(7) Debt/assets	-0.03	-0.01	-0.00	-0.01	-0.04	0.22	1.00				
(8) Cash/assets	-0.03	-0.07	-0.04	0.02	-0.07	-0.49	-0.30	1.00			
(9) ROA	0.09	0.06	0.02	0.00	0.09	0.41	0.07	-0.51	1.00		
(10) CAPEX/assets	-0.03	-0.06	-0.10	-0.07	0.01	-0.00	0.05	-0.14	0.11	1.00	
(11) Excess return	-0.01	-0.00	0.01	-0.00	-0.01	-0.00	0.03	-0.01	-0.00	0.01	1.00
(12) Inst. ownership	0.14	0.10	0.04	0.07	0.09	0.39	0.05	-0.18	0.33	0.02	0.01
(13) Inst. ownership HHI	-0.08	-0.06	-0.02	-0.02	-0.09	-0.35	0.03	0.15	-0.31	-0.02	-0.03

Table 2: Descriptive statistics for the count of shareholder proposals

This table shows the summary statistics for the count of shareholder proposals per firm-year. The sample is restricted to firm-years with at least some shareholder voting data, and a total media attention (news and social media buzz) above the 25th percentile in the cross-section of firms in each year.

Pabel A: Summary statistics

	N	Mean	Std. Dev.	min	Median	p90	max
Count shareholder proposals	60727	.17	0.76	0	0	0	27
Count G proposals	60727	.12	0.58	0	0	0	27
Count E and S proposals	60727	.06	0.35	0	0	0	12
Count E and S proposals inseparable	60727	.01	0.12	0	0	0	5
Count E proposals only	60727	.01	0.13	0	0	0	7
Count S proposals only	60727	.03	0.23	0	0	0	6

Panel B: Tabulation of the count on shareholder proposals

Count shareholder proposals	Freq.	Percent	Cum.
0	55268	91.01	91.01
1	3313	5.46	96.47
2	1060	1.75	98.21
3	444	0.73	98.94
4	260	0.43	99.37
5	130	0.21	99.59
6	95	0.16	99.74
7	63	0.10	99.85
8	35	0.06	99.90
9	17	0.03	99.93
10	13	0.02	99.95
11	9	0.01	99.97
12	6	0.01	99.98
13	3	0.00	99.98
14	3	0.00	99.99
15	2	0.00	99.99
17	2	0.00	99.99
20	1	0.00	100.00
23	1	0.00	100.00
26	1	0.00	100.00
27	1	0.00	100.00
Total	60727	100.00	

Table 3: Relationship between the number of shareholder proposals and sentiment

This table reports regressions where the dependent variable is the number of shareholder proposals on a firm's proxy statement in a given year. The regression model is a Poisson model to account for count data. The independent variables include sentiment measures and firm characteristics, all measured using data within a one-year window leading up to a firm's shareholder meeting. The unit of observation is firm-year. The variable definitions are provided in the Appendix. All independent variables are standardized to have a mean of zero and a standard deviation of one. Standard errors, clustered by firm, are reported below each coefficient estimate. Columns (1)-(3) include industry by year fixed effects. Columns (4) to (6) repeat Columns (1) to (3), respectively, using firm and year fixed effects. The sample is restricted to firm-years with at least some shareholder voting data, and a total media attention (news and social media buzz) above the 25th percentile in the cross-section of firms in each year.

	(1)	(2)	(3)	(4)	(5)	(6)
ESG sentiment	-0.26***	-0.12**		-0.21***	-0.15***	
	(0.05)	(0.05)		(0.05)	(0.05)	
Financial sentiment		-0.23***			-0.13***	
		(0.04)			(0.04)	
E sentiment			-0.07			-0.05*
			(0.04)			(0.03)
S sentiment			-0.11***			-0.10***
			(0.04)			(0.03)
G sentiment			-0.19***			-0.10**
			(0.04)			(0.04)
Log(assets)	1.78***	1.72***	1.75***	1.53***	1.52***	1.53***
	(0.05)	(0.05)	(0.06)	(0.14)	(0.14)	(0.14)
Debt/assets	-0.10*	-0.11**	-0.11*	-0.02	-0.03	-0.01
	(0.05)	(0.05)	(0.05)	(0.06)	(0.06)	(0.06)
Cash/assets	0.21***	0.19***	0.20***	-0.10	-0.10	-0.10
	(0.07)	(0.07)	(0.07)	(0.08)	(0.08)	(0.08)
ROA	0.12	0.17	0.14	-0.19*	-0.16	-0.18*
	(0.11)	(0.11)	(0.11)	(0.10)	(0.10)	(0.10)
CAPEX/assets	-0.02	-0.02	-0.02	-0.02	-0.03	-0.02
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Excess return	0.03	0.03	0.03	0.03	0.03	0.03
	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)
Inst. ownership	-0.17***	-0.15**	-0.17***	0.13	0.12	0.12
	(0.06)	(0.06)	(0.06)	(0.10)	(0.10)	(0.10)
Inst. ownership HHI	-0.22**	-0.25**	-0.23**	0.20	0.18	0.19
	(0.11)	(0.12)	(0.11)	(0.14)	(0.14)	(0.13)
Observations	25063	25061	23731	10072	10072	9650
Pseudo R^2	0.40	0.40	0.40	0.37	0.37	0.37
Fixed Effects	Ind*year	Ind*year	Ind*year	Firm+year	Firm+year	Firm+year

Standard errors are in parentheses
**** p<.01, ** p<.05, * p<.1*

Table 4: Relationship between the number of E and S shareholder proposals and sentiment

This table reports regressions where the dependent variable is the number of environmental or social (E or S) shareholder proposals on a firm's proxy statement in a year. The regression model is a Poisson model to account for count data. The independent variables include sentiment measures and firm characteristics, all measured using data within a one-year window leading up to a firm's shareholder meeting. The unit of observation is firm-year. The variable definitions are provided in the Appendix. All independent variables are standardized to have a mean of zero and a standard deviation of one. Standard errors, clustered by firm, are reported below each coefficient estimate. Columns (1)-(3) include industry by year fixed effects. Columns (4) to (6) repeat Columns (1) to (3), respectively, using firm and year fixed effects. The sample is restricted to firm-years with at least some shareholder voting data, and a total media attention (news and social media buzz) above the 25th percentile in the cross-section of firms in each year.

	(1)	(2)	(3)	(4)	(5)	(6)
ESG sentiment	-0.28***	-0.15**		-0.18***	-0.14**	
	(0.07)	(0.07)		(0.07)	(0.07)	
Financial sentiment		-0.20***			-0.07	
		(0.06)			(0.06)	
E sentiment			-0.10*			-0.09*
			(0.05)			(0.05)
S sentiment			-0.18***			-0.10*
			(0.05)			(0.05)
G sentiment			-0.05			0.00
			(0.06)			(0.07)
Log(assets)	2.30***	2.25***	2.29***	2.19***	2.18***	2.19***
	(0.08)	(0.09)	(0.09)	(0.22)	(0.22)	(0.23)
Debt/assets	-0.08	-0.08	-0.07	-0.03	-0.03	-0.02
	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)
Cash/assets	0.42***	0.39***	0.40***	-0.08	-0.07	-0.09
	(0.09)	(0.10)	(0.09)	(0.13)	(0.13)	(0.13)
ROA	0.78***	0.83***	0.77***	-0.14	-0.11	-0.15
	(0.18)	(0.18)	(0.18)	(0.17)	(0.18)	(0.17)
CAPEX/assets	0.01	0.01	0.01	0.03	0.03	0.04
	(0.06)	(0.06)	(0.06)	(0.07)	(0.07)	(0.07)
Excess return	0.09***	0.09***	0.10***	0.08***	0.08***	0.08***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Inst. ownership	-0.20**	-0.18**	-0.19**	0.11	0.11	0.08
	(0.09)	(0.09)	(0.09)	(0.13)	(0.13)	(0.13)
Inst. ownership HHI	-0.64***	-0.68***	-0.63***	-0.14	-0.16	-0.17
	(0.19)	(0.20)	(0.19)	(0.19)	(0.19)	(0.19)
Observations	21899	21897	20678	5385	5385	5257
Pseudo R^2	0.48	0.48	0.47	0.32	0.32	0.32
Fixed Effects	Ind*year	Ind*year	Ind*year	Firm+year	Firm+year	Firm+year

Standard errors are in parentheses
**** p<.01, ** p<.05, * p<.1*

Table 5: Relationship between number of G shareholder proposals and sentiment

This table reports regressions where the dependent variable is the number of governance (G, or non-E&S) shareholder proposals on a firm's proxy statement in a year. The regression model is a Poisson model to account for count data. The independent variables include sentiment measures and firm characteristics, all measured using data within a one-year window leading up to a firm's shareholder meeting. The unit of observation is firm-year. The variable definitions are provided in the Appendix. All independent variables are standardized to have a mean of zero and a standard deviation of one. Standard errors, clustered by firm, are reported below each coefficient estimate. Columns (1)-(3) include industry by year fixed effects. Columns (4) to (6) repeat Columns (1) to (3), respectively, using firm and year fixed effects. The sample is restricted to firm-years with at least some shareholder voting data, and a total media attention (news and social media buzz) above the 25th percentile in the cross-section of firms in each year.

	(1)	(2)	(3)	(4)	(5)	(6)
ESG sentiment	-0.25***	-0.10		-0.22***	-0.14**	
	(0.06)	(0.07)		(0.05)	(0.06)	
Financial sentiment		-0.24***			-0.16***	
		(0.05)			(0.05)	
E sentiment			-0.06			-0.03
			(0.05)			(0.04)
S sentiment			-0.07			-0.10**
			(0.05)			(0.04)
G sentiment			-0.22***			-0.14***
			(0.05)			(0.05)
Log(assets)	1.57***	1.51***	1.55***	1.23***	1.21***	1.23***
	(0.06)	(0.06)	(0.06)	(0.17)	(0.17)	(0.17)
Debt/assets	-0.10*	-0.11*	-0.11*	-0.02	-0.02	-0.01
	(0.06)	(0.06)	(0.06)	(0.08)	(0.08)	(0.08)
Cash/assets	0.07	0.05	0.06	-0.13	-0.12	-0.13
	(0.08)	(0.07)	(0.08)	(0.09)	(0.09)	(0.09)
ROA	-0.08	-0.04	-0.06	-0.23**	-0.19*	-0.21*
	(0.09)	(0.10)	(0.10)	(0.11)	(0.11)	(0.12)
CAPEX/assets	-0.03	-0.03	-0.03	-0.05	-0.05	-0.05
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Excess return	0.00	0.01	0.01	0.00	0.00	-0.00
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Inst. ownership	-0.11	-0.10	-0.11*	0.14	0.14	0.14
	(0.07)	(0.07)	(0.07)	(0.13)	(0.13)	(0.13)
Inst. ownership HHI	-0.10	-0.13	-0.11	0.31*	0.29*	0.30*
	(0.12)	(0.12)	(0.12)	(0.17)	(0.17)	(0.16)
Observations	24630	24628	23321	8905	8905	8541
Pseudo R^2	0.31	0.32	0.31	0.28	0.28	0.28
Fixed Effects	Ind*year	Ind*year	Ind*year	Firm+year	Firm+year	Firm+year

Standard errors are in parentheses
*** p<.01, ** p<.05, * p<.1*

Table 6: Relationship between the number of shareholder proposals and traditional media versus social media ESG measures

This table reports regressions where the dependent variable is the number of shareholder proposals on a firm's proxy statement in a year. The regression model is a Poisson model to account for count data. The independent variables include sentiment measures and firm characteristics, all measured using data within a one-year window leading up to a firm's shareholder meeting. The unit of observation is firm-year. The variable definitions are provided in the Appendix. All independent variables are standardized to have a mean of zero and a standard deviation of one. Standard errors, clustered by firm, are reported below each coefficient estimate. Columns (1)-(3) include industry by year fixed effects. Columns (4) to (6) repeat Columns (1) to (3), respectively, using firm and year fixed effects. The sample is restricted to firm-years with at least some shareholder voting data, and a total media attention (news and social media buzz) above the 25th percentile in the cross-section of firms in each year. In Panel A, sentiment measures are based on news (traditional media) sources only. In Panel B, sentiment measures are based on social media sources only. Control variables are included in all the regressions, same as the previous regressions, but not shown for simplicity.

Panel A: Traditional (news) media only

	(1)	(2)	(3)	(4)	(5)	(6)
ESG sentiment	-0.24***	-0.12**		-0.18***	-0.11***	
	(0.05)	(0.05)		(0.04)	(0.04)	
Financial sentiment		-0.22***			-0.14***	
		(0.05)			(0.04)	
E sentiment			-0.09**			-0.07**
			(0.04)			(0.03)
S sentiment			-0.09**			-0.08**
			(0.04)			(0.04)
G sentiment			-0.19***			-0.13***
			(0.03)			(0.03)
Observations	24804	24801	20778	9970	9970	8732
Pseudo R^2	0.40	0.40	0.39	0.37	0.37	0.36
Fixed Effects	Ind*year	Ind*year	Ind*year	Firm+year	Firm+year	Firm+year
Controls	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors are in parentheses
*** p<.01, ** p<.05, * p<.1*

Panel B: Social media only

	(1)	(2)	(3)	(4)	(5)	(6)
ESG sentiment	-0.17***	-0.06		-0.14***	-0.10**	
	(0.04)	(0.04)		(0.04)	(0.04)	
Financial sentiment		-0.25***			-0.11**	
		(0.05)			(0.05)	
E sentiment			-0.00			-0.02
			(0.04)			(0.03)
S sentiment			-0.16***			-0.10**
			(0.04)			(0.04)
G sentiment			-0.08**			-0.06
			(0.04)			(0.04)
Observations	24872	24872	19672	10044	10044	8352
Pseudo R^2	0.40	0.40	0.41	0.37	0.37	0.37
Fixed Effects	Ind*year	Ind*year	Ind*year	Firm+year	Firm+year	Firm+year
Controls	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors are in parentheses
*** p<.01, ** p<.05, * p<.1*

Table 7: Consequence of shareholder proposals

This table reports ordinary least square regressions of different outcomes for a firm's board of directors and CEO in each year on the number of shareholder proposals on the ballot for that firm-year. The outcome variable is either an indicator for forced CEO turnover, board turnover, or voting support in director elections. The CEO turnover indicator measures whether a firm's CEO is forced out of office in a year, scaled by the sample mean rate of forced CEO turnover to facilitate interpretation. Board turnover is defined as the percentage of a firm's directors that left the firm's board in a year, scaled by the sample mean of board turnover for easy interpretation. The support for directors is the percentage vote support rate for all the directors up for election in a firm in a year, scaled by the sample standard deviation. All independent variables, except for the count of shareholder proposals, are standardized to have a mean of zero and a standard deviation of one. Standard errors, clustered by firm, are reported below each coefficient estimate. All regressions include either industry times year fixed effects or firm and year fixed effects.

	(1)	(2)	(3)	(4)	(5)	(6)
	Forced CEO turnover		**Board turnover**		**Support for directors**	
Count shareholder proposals	0.186**	0.189*	0.106***	0.115***	-0.070***	-0.092***
	(0.075)	(0.109)	(0.016)	(0.018)	(0.014)	(0.016)
Log(assets)	-0.101	0.607**	0.067***	-0.012	0.179***	-0.084**
	(0.083)	(0.303)	(0.014)	(0.044)	(0.012)	(0.034)
Debt/assets	0.204***	0.164	0.028***	0.031*	-0.017*	-0.016
	(0.065)	(0.113)	(0.011)	(0.018)	(0.010)	(0.012)
Cash/assets	-0.154*	-0.497***	-0.005	-0.038	0.038***	0.060***
	(0.083)	(0.150)	(0.012)	(0.024)	(0.011)	(0.015)
ROA	-0.452***	-0.455***	-0.098***	-0.065***	0.010	0.008
	(0.139)	(0.159)	(0.013)	(0.022)	(0.011)	(0.014)
CAPEX/assets	-0.017	-0.041	-0.037***	-0.057***	0.028***	0.055***
	(0.059)	(0.076)	(0.010)	(0.014)	(0.008)	(0.009)
Excess return	-0.217***	-0.249***	-0.015**	-0.004	0.023***	0.022***
	(0.051)	(0.053)	(0.008)	(0.007)	(0.005)	(0.005)
Inst. ownership	0.025	-0.176	-0.004	-0.097***	0.005	0.054***
	(0.096)	(0.160)	(0.013)	(0.024)	(0.011)	(0.016)
Inst. ownership HHI	0.267	0.402*	0.108***	0.048*	0.057***	0.044***
	(0.179)	(0.236)	(0.019)	(0.026)	(0.013)	(0.014)
Constant	1.262***	1.107***	1.028***	1.033***	0.015*	-0.010**
	(0.108)	(0.158)	(0.010)	(0.008)	(0.009)	(0.005)
Observations	22641	22570	36598	36133	40780	40250
R-squared	0.036	0.126	0.053	0.232	0.099	0.406
Fixed Effects	Ind*year	Firm+year	Ind*year	Firm+year	Ind*year	Firm+year

Standard errors are in parentheses
**** p<.01, ** p<.05, * p<.1*

Table 8: Relationship between sentiment measures and support for director elections

This table reports regressions of voting support for director elections on a firm's proxy statement on sentiment measures and firm characteristics for director elections. The independent variables include sentiment measures and firm characteristics, all measured using data within a one-year window leading up to a firm's shareholder meeting. The unit of observation is firm-year. The variable definitions are provided in the Appendix. All independent variables are standardized to have a mean of zero and a standard deviation of one. Standard errors, clustered by firm and year, are reported below each coefficient estimate. Columns (1)-(3) include industry by year fixed effects. Columns (4) to (6) repeat Columns (1) to (3), respectively, using firm and year fixed effects. The sample is restricted to firm-years with at least some shareholder voting data, and a total media attention (news and social media buzz) above the 25th percentile in the cross-section of firms in each year. ***, **, * denotes significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
ESG sentiment	0.07***	0.03**		0.04***	0.01	
	(0.01)	(0.01)		(0.01)	(0.01)	
Financial sentiment		0.08***			0.09***	
		(0.01)			(0.01)	
E sentiment			0.02*			0.01
			(0.01)			(0.01)
S sentiment			0.04***			0.02**
			(0.01)			(0.01)
G sentiment			0.05***			0.04***
			(0.01)			(0.01)
Log(assets)	0.15***	0.16***	0.15***	-0.08**	-0.07*	-0.09**
	(0.01)	(0.01)	(0.01)	(0.04)	(0.04)	(0.04)
Debt/assets	0.00	0.00	0.00	-0.01	-0.01	-0.01
	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)
Cash/assets	0.02	0.02	0.02	0.08***	0.08***	0.07***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
ROA	0.04**	0.03**	0.04***	-0.01	-0.02	-0.01
	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
CAPEX/assets	0.03***	0.03**	0.03***	0.06***	0.06***	0.07***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
excess return	0.02**	0.01**	0.01**	0.01**	0.01**	0.01*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Inst. ownership	0.03**	0.02	0.03**	0.07***	0.06***	0.07***
	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
Inst. ownership HHI	0.04**	0.04**	0.04**	0.02	0.03	0.03
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Observations	25359	25357	24044	25101	25097	23754
R-squared	0.11	0.11	0.11	0.41	0.42	0.42
Fixed Effects	Ind*year	Ind*year	Ind*year	Firm+year	Firm+year	Firm+year

Standard errors are in parentheses
**** p<.01, ** p<.05, * p<.1*

Table 9: Identification with scandal movies as shocks

This table reports two-stage least square regressions of the number of shareholder proposals in each firm-year on ESG sentiment and firm-characteristics on a matched sample. The sentiment measures and firm characteristics are all measured using data within a one-year window leading up to a firm's shareholder meeting. The ESG sentiment measure is instrumented by an indicator of *Treat*Post* equaling one if a firm has a scandal movie widely released within a two-year window before the firm's shareholder meeting, and zero otherwise. The variable definitions are provided in the Appendix. All independent variables are standardized to have a mean of zero and a standard deviation of one. Standard errors, clustered by firm, are reported below each coefficient estimate. All regressions include firm and year fixed effects. The sample is restricted to a matched sample in which each treated firm, i.e., firm with a scandal movie, is matched with up to five control firms based on a nearest neighbor matching procedure with exact matching on industry and year and the following covariates: total news and social media buzz, ESG sentiment, financial sentiment, and firm size (log assets), all measured by one year lag relative to the event date (movie wide release date). Panel A reports the first stage regressions, while Panel B reports the second stage regressions.

Panel A: First stage

Dependent variable: ESG sentiment	(1)	(2)	(3)	(4)	(5)
Treat*Post	-.25***	-.22***	-.22***	-.18***	-.17***
	(.07)	(.08)	(.08)	(.04)	(.05)
Log(assets)		-.14**	-.14*		-.12**
		(.07)	(.07)		(.05)
Debt/assets		-.04*	-.04*		0
		(.02)	(.02)		(.02)
Cash/assets		-.05	-.05		-.06**
		(.03)	(.03)		(.03)
ROA		.04	.04		-.07*
		(.05)	(.05)		(.04)
CAPEX/assets		.01	.01		.03
		(.02)	(.02)		(.02)
Inst. ownership		.05	.05		.02
		(.04)	(.04)		(.04)
Inst. ownership HHI		-.02	-.02		-.01
		(.05)	(.05)		(.05)
Excess return			.03**	.01	.03**
			(.01)	(.01)	(.01)
Financial Sentiment				.39***	.38***
				(.03)	(.03)
Constant	-.18***	-.07	-.07	-.07***	.06
	(0)	(.08)	(.08)	(.01)	(.06)
Observations	2446	1875	1872	2341	1872
R-squared	.51	.52	.52	.61	.62
Year F.E.	yes	yes	yes	yes	yes
Firm F.E	yes	yes	yes	yes	yes

Standard errors are in parentheses
*** p<.01, ** p<.05, * p<.1*

Panel B: Second stage

Number of shareholder proposals	(1)	(2)	(3)	(4)	(5)
Instrumented ESG Sentiment	-2.46**	-1.91*	-1.94*	-3.2**	-2.38*
	(.96)	(.97)	(.99)	(1.37)	(1.25)
Log(assets)		.6**	.63***		.6**
		(.24)	(.24)		(.27)
Debt/assets		-.06	-.07		0
		(.07)	(.07)		(.07)
Cash/assets		-.09	-.1		-.14
		(.11)	(.11)		(.13)
ROA		.06	.06		-.12
		(.13)	(.13)		(.16)
CAPEX/assets		.04	.04		.07
		(.09)	(.08)		(.09)
Inst. ownership		-.01	0		-.02
		(.12)	(.11)		(.11)
Inst. ownership HHI		-.06	-.04		-.03
		(.11)	(.11)		(.12)
Excess return			.14**	.09*	.15**
			(.05)	(.05)	(.06)
Financial Sentiment				1.06*	.7
				(.55)	(.48)
Observations	2446	1875	1872	2341	1872
R-squared	-.73	-.36	-.37	-1.13	-.5
Year F.E.	yes	yes	yes	yes	yes
Firm F.E	yes	yes	yes	yes	yes
1st-stage F-Stat	19.505	10.658	10.875	11.649	7.979

Standard errors are in parentheses
**** p<.01, ** p<.05, * p<.1*

Internet Appendix

Table IA1: Detailed descriptive statistics for the number of shareholder proposals

Panel A: Count by industry

Industry code	Industry name	N	Count shareholder proposals	count G	count E&S	count E only	count S only
5	Tobacco Products	86	1.40	0.27	1.13	0	1.06
24	Aircraft	306	0.67	0.49	0.18	0.01	0.17
4	Beer & Liquor	163	0.53	0.27	0.26	0.05	0.13
31	Utilities	1538	0.45	0.28	0.18	0.09	0.08
26	Defense	144	0.44	0.23	0.21	0	0.20
29	Coal	157	0.39	0.23	0.16	0.11	0.05
43	Restaurants, Hotels, Motels	944	0.34	0.19	0.15	0.02	0.07
42	Retail	2703	0.34	0.23	0.11	0.02	0.07
23	Automobiles and Trucks	898	0.32	0.24	0.07	0.02	0.04
32	Communication	1434	0.31	0.23	0.08	0.00	0.07
30	Petroleum and Natural Gas	2486	0.31	0.14	0.17	0.08	0.07
2	Food Products	852	0.29	0.12	0.17	0.06	0.06
40	Transportation	1680	0.24	0.17	0.07	0.01	0.05
3	Candy & Soda	164	0.22	0.15	0.07	0.01	0.03
9	Consumer Goods	721	0.21	0.14	0.07	0.01	0.04
48	Almost Nothing	1409	0.18	0.12	0.06	0.02	0.04
18	Construction	790	0.18	0.13	0.05	0.03	0.01
38	Business Supplies	585	0.17	0.13	0.05	0.01	0.03
8	Printing and Publishing	345	0.16	0.15	0.01	0.00	0.01
39	Shipping Containers	158	0.16	0.16	0	0	0
6	Recreation	297	0.15	0.12	0.03	0	0.01
35	Computers	1723	0.14	0.11	0.03	0	0.02
14	Chemicals	1176	0.14	0.11	0.03	0.01	0.01
45	Insurance	2303	0.13	0.08	0.05	0.00	0.05
25	Shipbuilding, Railroad Equipment	151	0.13	0.09	0.04	0	0.03
33	Personal Services	700	0.13	0.11	0.02	0.00	0.02
21	Machinery	1787	0.13	0.10	0.04	0.00	0.02
46	Real Estate	466	0.13	0.11	0.02	0	0.01
28	Non-Metallic and Industrial Metal Mining	330	0.13	0.12	0.02	0.00	0.00
11	Healthcare	924	0.12	0.10	0.02	0	0.01
10	Apparel	640	0.12	0.08	0.05	0.01	0.04
7	Entertainment	756	0.12	0.10	0.02	0.00	0.01
34	Business Services	6665	0.11	0.08	0.03	0.00	0.02
36	Electronic Equipment	3358	0.10	0.08	0.02	0.00	0.02
17	Construction Materials	964	0.10	0.08	0.02	0.01	0.01
13	Pharmaceutical Products	6282	0.10	0.07	0.03	0.00	0.02
44	Banking	7709	0.10	0.07	0.03	0.00	0.02
47	Trading	4964	0.09	0.08	0.02	0.00	0.01

41	Wholesale	1645	0.09	0.08	0.01	0.00	0.01
37	Measuring and Control Equipment	1070	0.08	0.06	0.02	0.00	0.01
19	Steel Works Etc	683	0.08	0.05	0.04	0.00	0.03
27	Precious Metals	183	0.08	0.05	0.02	0.01	0.01
12	Medical Equipment	2038	0.07	0.06	0.01	0.00	0.00
22	Electrical Equipment	870	0.06	0.03	0.03	0.00	0.01
15	Rubber and Plastic Products	286	0.06	0.06	0	0	0
1	Agriculture	132	0.04	0.02	0.02	0	0.02
16	Textiles	128	0.02	0.02	0.01	0	0.01
20	Fabricated Products	109	0	0	0	0	0

Panel B: Top firm-years by count of shareholder proposals

Name	year	count_Sh
Amylin Pharmaceuticals, Inc.	2009	27
Exxon Mobil Corporation	2021	26
Health Management Associates, Inc.	2013	23
CoreLogic, Inc.	2020	20
Exxon Mobil Corporation	2008	17
CSX Corporation	2008	17
Darden Restaurants, Inc.	2014	15
General Electric Company	2004	15
Micrel, Inc.	2008	14
Zoran Corp.	2011	14

Panel C: Top firm-years by count of shareholder proposals – different categories

Name	year	**Count E**
Exxon Mobil Corporation	2008	7
Exxon Mobil Corporation	2010	6
Dominion Energy, Inc.	2012	5
Chevron Corporation	2016	5
Exxon Mobil Corporation	2016	5
ConocoPhillips	2010	5
Dominion Energy, Inc.	2015	5
Dominion Energy, Inc.	2011	4
Exxon Mobil Corporation	2021	4
Exxon Mobil Corporation	2007	4

Name	year	**Count S**
Exxon Mobil Corporation	2021	6
Amazon.com, Inc.	2020	5
Alphabet Inc.	2017	5
Altria Group, Inc.	2004	5
Altria Group, Inc.	2009	5
Exxon Mobil Corporation	2008	5
Amazon.com, Inc.	2021	4
Altria Group, Inc.	2003	4
Altria Group, Inc.	2008	4
Reynolds American, Inc.	2003	4

Name	year	**Count G**
Amylin Pharmaceuticals, Inc.	2009	27
Health Management Associates, Inc.	2013	22
CoreLogic, Inc.	2020	20
CSX Corporation	2008	17
Exxon Mobil Corporation	2021	16
Equity Commonwealth	2014	14
Micrel, Inc.	2008	14
Zoran Corp.	2011	14
Darden Restaurants, Inc.	2014	13
XenoPort, Inc.	2014	13

Table IA2: Double clustering as a robustness check

This table reports regressions where the dependent variable is the number of shareholder proposals on a firm's proxy statement in a given year. The regression model is a Poisson model to account for count data. The independent variables include sentiment measures and firm characteristics, all measured using data within a one-year window leading up to a firm's shareholder meeting. The unit of observation is firm-year. The variable definitions are provided in the Appendix. All independent variables are standardized to have a mean of zero and a standard deviation of one. Standard errors, clustered by firm and year, are reported below each coefficient estimate. Columns (1)-(3) include industry by year fixed effects. Columns (4) to (6) repeat Columns (1) to (3), respectively, using firm and year fixed effects. The sample is restricted to firm-years with at least some shareholder voting data, and a total media attention (news and social media buzz) above the 25th percentile in the cross-section of firms in each year.

	(1)	(2)	(3)	(4)	(5)	(6)
ESG sentiment	-0.26***	-0.12**		-0.21***	-0.15***	
	(0.05)	(0.05)		(0.04)	(0.04)	
Financial sentiment		-0.23***			-0.13***	
		(0.05)			(0.04)	
E sentiment			-0.07			-0.05
			(0.05)			(0.03)
S sentiment			-0.11**			-0.10**
			(0.05)			(0.04)
G sentiment			-0.19***			-0.10**
			(0.04)			(0.04)
Log(assets)	1.78***	1.72***	1.75***	1.53***	1.52***	1.53***
	(0.06)	(0.06)	(0.06)	(0.15)	(0.15)	(0.15)
Debt/assets	-0.10*	-0.11**	-0.11*	-0.02	-0.03	-0.01
	(0.06)	(0.05)	(0.06)	(0.06)	(0.06)	(0.06)
Cash/assets	0.21***	0.19***	0.20***	-0.10	-0.10	-0.10
	(0.07)	(0.06)	(0.07)	(0.09)	(0.09)	(0.09)
ROA	0.12	0.17	0.14	-0.19**	-0.16*	-0.18**
	(0.10)	(0.10)	(0.10)	(0.09)	(0.08)	(0.09)
CAPEX/assets	-0.02	-0.02	-0.02	-0.02	-0.03	-0.02
	(0.05)	(0.05)	(0.05)	(0.04)	(0.05)	(0.04)
Excess return	0.03	0.03	0.03	0.03	0.03	0.03
	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)
Inst. ownership	-0.17**	-0.15**	-0.17**	0.13	0.12	0.12
	(0.07)	(0.07)	(0.07)	(0.10)	(0.09)	(0.10)
Inst. ownership HHI	-0.22**	-0.25**	-0.23**	0.20	0.18	0.19
	(0.10)	(0.11)	(0.10)	(0.16)	(0.16)	(0.15)
Observations	25063	25061	23731	10072	10072	9650
Pseudo R^2	0.40	0.40	0.40	0.37	0.37	0.37
Fixed Effects	Ind*year	Ind*year	Ind*year	Firm+year	Firm+year	Firm+year

Standard errors are in parentheses
*** p<.01, ** p<.05, * p<.1*

Table IA3: Relationship between sentiment measures and count of all shareholder proposals submitted

This table reports regressions where the dependent variable is the number of shareholder proposals submitted to a firm each year (Panel A) or the number of shareholder proposals with a final vote (Panel B), i.e. removing withdrawn and omitted proposals. The regression model is a Poisson model to account for count data. The independent variables include sentiment measures and firm characteristics, all measured using data within a one-year window leading up to a firm's shareholder meeting. The unit of observation is firm-year. The variable definitions are provided in the Appendix. All independent variables are standardized to have a mean of zero and a standard deviation of one. Standard errors, clustered by firm, are reported below each coefficient estimate. Columns (1)-(3) include industry by year fixed effects. Columns (4) to (6) repeat Columns (1) to (3), respectively, using firm and year fixed effects. The sample is restricted to firm-years with at least some shareholder voting data, and a total media attention (news and social media buzz) above the 25th percentile in the cross-section of firms in each year. Control variables are included in all regressions as in the baseline, but not shown to save space.

Panel A: Count of all shareholder proposals submitted in a year

	(1)	(2)	(3)	(4)	(5)	(6)
ESG sentiment	-0.15***	-0.03		-0.18***	-0.10**	
	(0.05)	(0.06)		(0.04)	(0.05)	
Financial sentiment		-0.18***			-0.12***	
		(0.04)			(0.03)	
E sentiment			-0.02			-0.05
			(0.04)			(0.03)
S sentiment			-0.10***			-0.09***
			(0.04)			(0.03)
G sentiment			-0.11**			-0.07*
			(0.04)			(0.04)
Observations	23187	23185	22156	8867	8867	8676
Pseudo R^2	0.52	0.53	0.52	0.46	0.46	0.46
Fixed Effects	Ind*year	Ind*year	Ind*year	Firm+year	Firm+year	Firm+year
Controls	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors are in parentheses
*** p<.01, ** p<.05, * p<.1*

Panel B: Count of all shareholder proposals with a final vote in a year

	(1)	(2)	(3)	(4)	(5)	(6)
ESG sentiment	-0.24***	-0.12*		-0.23***	-0.19***	
	(0.06)	(0.07)		(0.05)	(0.06)	
Financial sentiment		-0.17***			-0.06	
		(0.05)			(0.04)	
E sentiment			-0.06			-0.06
			(0.05)			(0.04)
S sentiment			-0.14***			-0.12***
			(0.05)			(0.04)
G sentiment			-0.13**			-0.07
			(0.05)			(0.05)
Observations	22360	22358	21330	6423	6423	6282
Pseudo R^2	0.49	0.49	0.48	0.39	0.39	0.38
Fixed Effects	Ind*year	Ind*year	Ind*year	Firm+year	Firm+year	Firm+year
Controls	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors are in parentheses
*** p<.01, ** p<.05, * p<.1*

Table IA4: Relationship between sentiment measures and support for shareholder proposals

This table reports regressions where the dependent variable is the average support rate for all the shareholder proposals on a firm's proxy statement in a year. The regression model is OLS. The independent variables include sentiment measures and firm characteristics, all measured using data within a one-year window leading up to a firm's shareholder meeting. The unit of observation is firm-year. The variable definitions are provided in the Appendix. All independent variables are standardized to have a mean of zero and a standard deviation of one. Standard errors, clustered by firm, are reported below each coefficient estimate. Columns (1)-(3) include industry by year fixed effects. Columns (4) to (6) repeat Columns (1) to (3), respectively, using firm and year fixed effects. The sample is restricted to firm-years with at least some shareholder voting data, and a total media attention (news and social media buzz) above the 25th percentile in the cross-section of firms in each year. Panel A focuses on all types of shareholder proposals. Panels B and C break it down to E&S vs. G proposals, respectively.

Panel A: Support for all shareholder proposals in a year

	(1)	(2)	(3)	(4)	(5)	(6)
Support for all shareholder proposals						
ESG sentiment	-0.00	-0.02		-0.06	-0.05	
	(0.04)	(0.05)		(0.04)	(0.05)	
Financial sentiment		0.03			-0.03	
		(0.04)			(0.03)	
E sentiment			-0.01			-0.06**
			(0.03)			(0.03)
S sentiment			0.04			-0.01
			(0.04)			(0.04)
G sentiment			-0.03			0.01
			(0.04)			(0.04)
Log(assets)	-0.48***	-0.47***	-0.49***	-0.30**	-0.30**	-0.29**
	(0.04)	(0.04)	(0.04)	(0.12)	(0.12)	(0.12)
Debt/assets	-0.10***	-0.10***	-0.10***	-0.02	-0.02	-0.01
	(0.03)	(0.03)	(0.03)	(0.05)	(0.05)	(0.05)
Cash/assets	-0.20***	-0.20***	-0.20***	-0.04	-0.04	-0.01
	(0.05)	(0.05)	(0.05)	(0.07)	(0.07)	(0.06)
ROA	-0.10*	-0.11*	-0.12*	0.16	0.17	0.07
	(0.06)	(0.06)	(0.06)	(0.11)	(0.11)	(0.10)
CAPEX/assets	0.02	0.02	0.03	0.05	0.05	0.05
	(0.04)	(0.04)	(0.04)	(0.06)	(0.06)	(0.06)
Excess return	-0.02	-0.02	-0.02	-0.01	-0.01	-0.02
	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)
Inst. ownership	0.16***	0.16***	0.13**	-0.00	-0.01	-0.01
	(0.05)	(0.05)	(0.05)	(0.07)	(0.07)	(0.07)
Inst. ownership HHI	-0.09	-0.09	-0.12	-0.19	-0.20	-0.17
	(0.11)	(0.11)	(0.11)	(0.14)	(0.14)	(0.15)
Observations	3045	3045	3003	2940	2940	2902
R-squared	0.33	0.33	0.34	0.50	0.50	0.49
Fixed Effects	Ind*year	Ind*year	Ind*year	Firm+year	Firm+year	Firm+year
Controls	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors are in parentheses
**** p<.01, ** p<.05, * p<.1*

Panel B: Support for E&S shareholder proposals in a year

Support for E or S shareholder proposals	(1)	(2)	(3)	(4)	(5)	(6)
ESG sentiment	0.02	-0.03		-0.05	-0.04	
	(0.07)	(0.08)		(0.06)	(0.06)	
Financial sentiment		0.06			-0.03	
		(0.06)			(0.04)	
E sentiment			-0.03			-0.07
			(0.05)			(0.05)
S sentiment			0.01			-0.06
			(0.06)			(0.04)
G sentiment			0.06			0.11*
			(0.07)			(0.06)
Log(assets)	-0.29***	-0.28***	-0.29***	-0.23	-0.23	-0.22
	(0.07)	(0.07)	(0.07)	(0.19)	(0.19)	(0.20)
Debt/assets	-0.02	-0.02	-0.02	-0.12	-0.12	-0.12
	(0.05)	(0.05)	(0.05)	(0.07)	(0.07)	(0.07)
Cash/assets	-0.16*	-0.15*	-0.15*	0.10	0.11	0.10
	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)
ROA	-0.17	-0.18	-0.17	-0.00	0.01	-0.03
	(0.14)	(0.14)	(0.14)	(0.18)	(0.18)	(0.18)
CAPEX/assets	-0.02	-0.02	-0.02	0.13*	0.13*	0.13*
	(0.05)	(0.05)	(0.05)	(0.07)	(0.07)	(0.07)
Excess return	0.01	0.02	0.02	-0.01	-0.01	-0.01
	(0.05)	(0.05)	(0.05)	(0.03)	(0.03)	(0.03)
Inst. ownership	0.18**	0.18**	0.17**	0.00	-0.00	0.01
	(0.08)	(0.08)	(0.08)	(0.12)	(0.12)	(0.12)
Inst. ownership HHI	-0.41***	-0.40***	-0.40***	-0.04	-0.04	-0.02
	(0.13)	(0.13)	(0.13)	(0.20)	(0.21)	(0.22)
Observations	1264	1264	1249	1362	1362	1342
R-squared	0.48	0.48	0.48	0.62	0.62	0.62
Fixed Effects	Ind*year	Ind*year	Ind*year	Firm+year	Firm+year	Firm+year
Controls	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors are in parentheses
**** p<.01, ** p<.05, * p<.1*

Panel C: Support for governance related (G) shareholder proposals in a year

Support for G shareholder proposals	(1)	(2)	(3)	(4)	(5)	(6)
ESG sentiment	-0.04	-0.07		-0.03	-0.03	
	(0.05)	(0.06)		(0.06)	(0.07)	
Financial sentiment		0.05			-0.00	
		(0.04)			(0.04)	
E sentiment			-0.04			-0.06
			(0.04)			(0.04)
S sentiment			0.02			0.04
			(0.04)			(0.04)
G sentiment			-0.00			0.02
			(0.05)			(0.05)
Log(assets)	-0.50***	-0.49***	-0.50***	-0.36**	-0.36**	-0.35**
	(0.05)	(0.05)	(0.05)	(0.15)	(0.15)	(0.15)
Debt/assets	-0.09**	-0.09**	-0.09**	-0.09	-0.09	-0.08
	(0.04)	(0.04)	(0.04)	(0.05)	(0.05)	(0.06)
Cash/assets	-0.18***	-0.18***	-0.18***	-0.08	-0.08	-0.03
	(0.06)	(0.06)	(0.06)	(0.08)	(0.08)	(0.07)
ROA	-0.00	-0.01	-0.03	0.14	0.14	0.02
	(0.06)	(0.06)	(0.06)	(0.13)	(0.13)	(0.13)
CAPEX/assets	0.10**	0.10**	0.10**	0.07	0.07	0.06
	(0.05)	(0.05)	(0.05)	(0.08)	(0.08)	(0.08)
Excess return	-0.01	-0.01	-0.01	-0.02	-0.02	-0.03
	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)
Inst. ownership	0.17***	0.17***	0.15**	-0.00	-0.00	-0.01
	(0.06)	(0.06)	(0.06)	(0.08)	(0.08)	(0.08)
Inst. ownership HHI	-0.13	-0.12	-0.15	-0.44***	-0.44***	-0.41***
	(0.14)	(0.14)	(0.15)	(0.15)	(0.15)	(0.16)
Observations	2304	2304	2278	2217	2217	2196
R-squared	0.35	0.36	0.36	0.48	0.48	0.48
Fixed Effects	Ind*year	Ind*year	Ind*year	Firm+year	Firm+year	Firm+year
Controls	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors are in parentheses
**** p<.01, ** p<.05, * p<.1*

Table IA5: Two-stage least squares on the full sample (without matching)

This table reports two-stage least square regressions of the number of shareholder proposals in each firm-year on ESG sentiments and firm-characteristics. The sentiment measures and firm characteristics are all measured using data within a one-year window leading up to a firm's shareholder meeting. The ESG sentiment measure is instrumented by an indicator of *Treat*Post* equaling one if a firm has a scandal movie widely released within a two-year window before the firm's shareholder meeting, and zero otherwise. The variable definitions are provided in the Appendix. All independent variables are standardized to have a mean of zero and a standard deviation of one. Standard errors, clustered by firm, are reported below each coefficient estimate. All regressions include firm and year fixed effects. The sample is restricted to firm-years with at least some shareholder voting data, and a total media attention (news and social media buzz) above the 25th percentile in the cross-section of firms in each year. Panel A reports the first stage regression estimates. Panel B reports the second stage regression estimates.

Panel A: First stage

Dependent variable = ESG sentiment	(1)	(2)	(3)	(4)	(5)
Treat*Post	-.26***	-.23**	-.23**	-.19***	-.17***
	(.08)	(.09)	(.09)	(.04)	(.06)
Log(assets)		-.05*	-.05*		.01
		(.02)	(.02)		(.02)
Debt/assets		-.04***	-.04***		-.02***
		(.01)	(.01)		(.01)
Cash/assets		.04***	.04***		.02**
		(.01)	(.01)		(.01)
ROA		.02**	.02*		-.03**
		(.01)	(.01)		(.01)
CAPEX/assets		.02***	.02***		.01
		(.01)	(.01)		(.01)
Inst. ownership		.04***	.04***		.02
		(.01)	(.01)		(.01)
Inst. ownership HHI		-.02	-.02		.01
		(.01)	(.01)		(.01)
Excess return			0	0	0
			(0)	(0)	(0)
Financial Sentiment				.38***	.37***
				(.01)	(.01)
Constant	.01***	-.04***	-.04***	-.01***	-.03***
	(0)	(.01)	(.01)	(0)	(.01)
Observations	36459	25990	25922	33895	25918
R-squared	.44	.45	.45	.53	.53
Year F.E.	yes	yes	yes	yes	yes
Firm F.E	yes	yes	yes	yes	yes

Standard errors are in parentheses
*** p<.01, ** p<.05, * p<.1*

Panel B: Second stage

Dependent variable = Number of shareholder proposals	(1)	(2)	(3)	(4)	(5)
Instrumented ESG Sentiment	-2.54***	-2.35**	-2.37**	-3.37***	-3.22**
	(.93)	(1.05)	(1.05)	(1.22)	(1.25)
Log(assets)		.16*	.16**		.31***
		(.08)	(.08)		(.08)
Debt/assets		-.1**	-.1**		-.08**
		(.05)	(.05)		(.04)
Cash/assets		.06	.06		.05
		(.05)	(.05)		(.05)
ROA		.03	.02		-.11**
		(.04)	(.03)		(.05)
CAPEX/assets		.04	.04		.01
		(.03)	(.03)		(.02)
Inst. ownership		.07	.07		.04
		(.05)	(.05)		(.05)
Inst. ownership HHI		-.05	-.05		.03
		(.04)	(.04)		(.04)
Excess return			.01	0	0
			(.01)	(.01)	(.01)
Financial Sentiment				1.26***	1.14**
				(.47)	(.46)
Observations	36459	25990	25922	33895	25918
R-squared	-6.21	-4.94	-5.01	-9.45	-8.03
Year F.E.	yes	yes	yes	yes	yes
Firm F.E	yes	yes	yes	yes	yes
1st-stage F-Stat	12.735	6.886	7.028	7.307	4.346

Standard errors are in parentheses
**** p<.01, ** p<.05, * p<.1*