

Beyond ESG: Executive Pay Metrics and Shareholder Support

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Abstract

We document that executive compensation contracts feature a multitude of market, earnings, operating, and ESG metrics and that the increase in ESG metrics has been accompanied by a higher propensity to use operating metrics. These developments are particularly pronounced in companies with volatile returns, recently appointed CEOs, and new active blockholders, such as activist hedge funds and private equity investors. Compensation metrics do not appear to have a large effect on actual payouts to executives and on the sensitivity of pay to market, earnings, and ESG performance, but rather aim to create consensus among shareholders on the proposed pay and the overall corporate strategy.

Keywords: Executive compensation, ESG metrics, CEO incentives, shareholder voting, shareholder and management proposals

JEL Classifications: J33, M12, M14, G34, G32

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We document that executive compensation contracts feature a multitude of market, earnings, operating, and ESG metrics and that the increase in ESG metrics has been accompanied by a higher propensity to use operating metrics. These developments are particularly pronounced in companies with volatile returns, recently appointed CEOs, and new active blockholders, such as activist hedge funds and private equity investors. Compensation metrics do not appear to have a large effect on actual payouts to executives and on the sensitivity of pay to market, earnings, and ESG performance, but rather aim to create consensus among shareholders on the proposed pay and the overall corporate strategy.

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Contracts that link executive compensation to shareholder wealth are viewed as the most effective way to align managers' incentives with the actions that shareholders would take if they had complete information about the firms they own (Jensen and Murphy, 1990; Hall and Liebman, 1998). Existing theories have predominantly examined the features of optimal contracts in terms of shareholder value maximization without considering the potential impact of shareholders' non-pecuniary preferences for environmental and social (E&S) policies on these contract features.

However, it is plausible that optimal contracts may not change significantly due to shareholders' non-pecuniary preferences regarding E&S policies because firms' stock prices already reflect the preferences of marginal investors, who would sell their shares if they were dissatisfied with corporate policies. Thus, in most cases, stock prices could effectively guide managerial actions, as demonstrated empirically by Ganchev, Giannetti, and Li (2022). Partially, for this reason, the growing emphasis on E&S targets in executive compensation has raised concerns that this trend reflects CEO power, with the primary goal of serving executive interests in ways that are not transparent to stakeholders (Bebchuk and Tallarita, 2022).

To contribute to this debate, we read and manually classify the compensation targets in the executive contracts of 10,636 listed companies around the world. Not only do we confirm the explosive growth of E&S targets in executive contracts, but we also show that boards routinely subordinate executive compensation to various operational targets, such as sales expansion, cost reduction, efficiency, project completion, or capital structure, which go well beyond stock returns and profits. Additionally, contracts often feature market- and earnings-based metrics.

We explore the circumstances under which companies disclose executive compensation metrics and their use of non-financial targets in executive contracts. We show that companies with E&S metrics also disclose market, financial, and operating performance metrics. More

importantly, firms that disclose more metrics also award more equity-based compensation, which is considered crucial to aligning managerial incentives with shareholder interests.

Theory predicts that when conventional signals of managerial performance, such as stock returns and profits, are highly volatile and noisy, it is optimal to subordinate compensation to additional, less noisy signals (Holmstrom, 1979). Non-financial targets may also benefit managerial efforts by directing them towards objectives that the board considers important (Holmstrom and Milgrom, 1991). Consistent with the theory, companies with volatile measures of market performance and erratic sentiment in the news coverage of ESG issues are more likely to disclose ESG metrics. However, only ESG news volatility is positively associated with the likelihood of using operating and earnings metrics. Interestingly, firms with volatile returns disclose fewer earnings metrics.

Executive contracts sometimes emphasize metrics along dimensions in which firms underperform; for instance, if a firm lags behind in sales growth (cashflow) relative to its industry peers, its executive's contract is likely to include sales (cashflow) targets. Also, firms with worse E&S reputations tend to introduce E&S metrics that are considered material for the firms within their respective industries, as outlined by the Sustainability Accounting Standard Board (SASB).

However, we also observe that executive contracts tend to emphasize E&S metrics in areas where companies have recently performed well. Thus, E&S metrics are not introduced to direct managerial efforts toward E&S dimensions requiring improvement. Similarly, firms with high profitability or investment typically have compensation contracts that emphasize these aspects. Overall, the evidence that less noisy metrics are chosen to direct managerial efforts towards specific tasks is mixed. Instead, it appears that boards consider it fair to reward executives for good performance, as Edmans, Gosling, and Jenter (2023) emphasize. Puzzlingly, we find that both total

and variable compensation are related to superior market and E&S performance, even in firms without explicit E&S targets. Thus, performing well on the E&S metrics explicitly incorporated in the contract translates into only a marginal increase in total compensation. Similar patterns hold for operating and earnings metrics.

Metrics are often used in the early years of a CEO's tenure, when there is more uncertainty about their strategy and skills. Also, the arrival of sophisticated outside blockholders, who may have opinions and demands about corporate strategy and objectives, is correlated with increased metrics usage. Based on this evidence, we conjecture that all metrics, and E&S metrics in particular, serve as a communication tool to explain to shareholders the level and structure of CEO compensation and, more broadly, the corporate strategy. To test this conjecture, we analyze shareholder voting patterns and the incidence of shareholder proposals. We start by considering shareholders' votes on the companies' compensation policies. Shareholders have the right to vote on the remuneration of executives in the US and most of the other jurisdictions in which firms in our sample are incorporated. We find that companies whose executives' contracts include more metrics receive higher proportion of votes supporting their compensation packages, even after controlling for the firm's stock market and E&S performance and executives' total compensation. Furthermore, companies whose contracts specify more metrics face notably lower shareholder dissent on management proposals. Thus, it appears that when boards communicate with shareholders through the use of metrics, shareholders' opposition to compensation and other proposals is substantially lower. Consistent with such an interpretation, we observe an increase in the number of metrics featured in CEO contracts following periods of high shareholder dissent on say-on-pay proposals.

Further evidence supports the conjecture that pay metrics increase shareholder awareness of corporate strategy. Firms using E&S metrics are less likely to receive E&S proposals from shareholders, regardless of the firms' actual E&S performance. Moreover, companies with more metric types and a higher number of metrics are less likely to receive shareholder proposals, and especially shareholder proposals opposed by management.

Extant literature has shown that there is considerable cross-sectional variation in the quality of shareholder proposals, and that ill-conceived shareholder proposals waste managerial time and destroy shareholder value (Gantchev and Giannetti, 2021; Matsusaka, Ozbas, and Yi, 2019). Our results suggest that compensation metrics enhance shareholders' understanding of management strategy and foster consensus, despite the limited direct effects of E&S, operating, and other metrics on actual executive pay.

We contribute to the extensive literature on executive compensation (see, Edmans, Gabaix, and Jenter (2017) and Edmans, Gosling, and Jenter (2023) for recent reviews). A more recent and growing strand of this literature examines ESG targets in managerial contracts and finds mixed results on whether ESG-linked pay is associated with future ESG performance (Homroy, Mavruk, Nguyen, 2023; Cohen, Kadach, Ormazabal, and Reichelstein, 2023; Ikram, Li, and Minor, 2023; Hazarica et al, 2022; Flammer, Hong, and Minor, 2019; Maas, 2018; Michaely, Schmid, and Wang, 2024). Qin and Yang (2022) show that turnover is less sensitive to financial performance in companies with ESG pay. To the best of our knowledge, we are the first to consider all metrics used in executive compensation and propose a novel signaling role of compensation metrics in communicating a firm's corporate strategy to its shareholders.

By highlighting that E&S metrics are merely a subset of the multitude of metrics disclosed to shareholders, we also contribute to the broader literature on executive compensation, which has

largely neglected the use of diverse metrics and focused on CEOs' end-of year equity, stock options, and bonus awards to study the shape of CEO compensation. Notable exceptions are Ittner, Larker, and Rajan (1997), who find that companies with more innovative strategies and companies in regulated industries employ more financial performance measures in CEO bonus contracts and De Angelis and Grinstein (2006) who study the use of prespecified metrics in performance-based awards. These papers find that firms choose metrics that are more informative about performance, as predicted by contract theories. However, these studies were written well before any interest in sustainability emerged and do not consider the effects of compensation metrics on shareholder consensus.

1. Data

1.1 Compensation Data and Metrics Classification

We obtain compensation data for international listed companies from Executive Compensation Analytics (ECA), a dataset provided by Institutional Shareholder Services (ISS). The data include information on salaries, bonuses, equity awards, stock options, and other forms of remuneration. We consider only CEO compensation contracts, as the data contain contracts for multiple top executives in very few instances. Our sample includes 10,636 unique firms across 34 countries from 2011 to 2021, with increasing coverage over time. Notably, nearly half of the firms are from outside the U.S.

Crucially for our study, the data provide detailed textual information on the performance metrics used to determine CEOs' final remuneration.¹ Appendix B presents examples of disclosed

¹ Another ISS dataset – Incentive Lab – is frequently used to investigate executive compensation. Compared to the ECA data we use, Incentive Lab suffers from two disadvantages: limited company coverage (only up to 16% of the coverage of ECA) and limited data on metric categories, especially before 2018, when Incentive Lab collected only three broad categories, accounting, stock price, and other. The latter category included both operating and ESG

metrics from executive compensation contracts and illustrates how we use the dictionary in Appendix C to classify these metrics. We manually review metrics with complex or ambiguous keyword combinations to improve accuracy. By combining textual analysis and manual review, we achieve an exceptionally detailed classification that allows for a more nuanced analysis of compensation contracts than previous studies, which typically rely on coarser ESG metric groupings. We then categorize the various metric types disclosed in compensation contracts into 31 distinct categories, each reflecting a unique aspect of executive performance evaluation.

We organize the metrics into four broad dimensions: *Earnings*, *Market*, *Operating*, and *ESG*. *Earnings metrics* encompass two categories: *Profitability* and *Cashflow*. *Profitability*, in turn, includes return on assets and net income, while *Cashflow* includes operating cashflow. In contrast, *Market metrics* are directly linked to shareholder returns and incorporate indicators related to share price performance.

The set of *Operating metrics* includes those related to a company's business operations, organized into five key areas: *Capital Structure*, *Efficiency*, *Investment*, *Sales*, and *Other*. *Efficiency metrics* cover aspects such as operating expenditures and asset turnover, while the category *Other* includes metrics such as customer satisfaction and the successful completion of specific strategic projects.

We use the Sustainability Accounting Standards Board (SASB) classification to categorize the ESG metrics.² The SASB classification includes five broad dimensions of sustainability: Environmental, Social Capital, Human Capital, Business Model and Innovation, and Leadership and Governance. Each dimension contains several specific categories, providing a comprehensive

metrics. Even after 2018, Incentive Lab distinguishes only a handful of E&S metrics, which would not allow us to investigate compensation metrics and their materiality to the level of detail we achieve with textual analysis.

² The SASB is an independent, nonprofit organization that focuses on enhancing the quality and comparability of sustainability disclosures in financial reporting.

framework for assessing a company’s performance in these areas. For example, the Environmental dimension covers six topics: GHG Emissions, Air Quality, Energy Management, Water and Wastewater Management, Waste and Hazardous Materials Management, and Ecological Impacts.

While the original SASB classification includes 26 categories, not all ESG metrics in the executive contracts have the level of detail to be classified within these specific categories. When an ESG metric lacks sufficient specificity for a precise classification, we assign it to one of the five broader dimensions – Environmental, Social Capital, Human Capital, Business Model and Innovation, or Leadership and Governance – or we simply characterize it as ESG. For instance, a metric aimed at limiting the firm’s environmental impact would be classified under the Environmental category. In contrast, a broader disclosed metric such as “Corporate Social Responsibility” would be categorized under ESG. Metrics with a clear sustainability focus that do not directly align with SASB categories, such as those related to sustainability reporting or broad ESG ratings, are also included in this general ESG category. Moreover, due to the overlap between specific SASB categories and the general nature of some disclosed metrics, we have merged a few categories: Customer Privacy with Data Security, and Product Quality and Safety with Customer Welfare. Thus, our classification includes 24 specific ESG metrics.

Importantly, recognizing that firms across industries face distinct sustainability-related risks and opportunities, SASB has developed a *Materiality Map* assessing the relevance (or materiality) of the individual ESG metrics for the performance and risks faced by firms in different industries, defined according to SASB’s Sustainable Industry Classification System (SICS). Specifically, companies are grouped into 77 industries based on their primary business activities and the most relevant ESG challenges they face. We use the SASB Materiality Map to evaluate the relevance of the ESG metrics in executive compensation contracts.

1.2 Firm-Level ESG Performance

We measure a firm's ESG performance using data from FactSet TruValue Labs (TruValue), an artificial intelligence (AI)/Big Data company that provides daily updates on companies' ESG-related information. Specifically, TruValue applies AI to process unstructured data from over 200,000 vetted sources, which do not include companies' self-reported information. Thus, unlike ESG scores provided by other data companies, which are based on firms' disclosed information, TruValue mines big data to capture the views of analysts, advocacy groups, government regulators, and other sources published by independent media.

TruValue algorithms identify ESG issues, quantify the sentiment in the language, and then produce indicators that allow for the measurement of a company's recent ESG performance as well as the ranking of the company relative to its industry peers. Importantly, besides considering a firm's overall ESG performance, TruValue produces separate scores of a company's recent performance according to all individual dimensions highlighted in the SASB materiality framework. Consequently, we can track not only overall scores but also annual changes in ESG performance, broken down by the 26 SASB categories.

In our analysis, we use a company's ESG score and its ESG materiality score, which rank the company relative to its industry peers according to all ESG dimensions and those that are material in the company's industry, respectively. In addition, we use firms' *Pulse Scores*, which are measures of timely performance changes that highlight a company's performance according to each of the SASB categories as well as its overall performance and its performance along material dimensions.³

³ We average the Pulse Scores of the SASB ESG categories.

The Pulse Scores are updated daily and are produced by applying a running-sum-average formulation to a continuous time stream of NLP-generated assessments related to the category (or any category, in the case of overall measures), with more recent events weighted more significantly (exponentially decaying with 14-day half-life). Since executive compensation varies annually, in our analysis, we consider the maximum of a firm's Pulse Scores in individual SASB categories or overall. We also consider the minimum Pulse Score in each SASB category to identify the effect of ESG incidents on metric choices.

1.3 Other Data Sources

We employ various other data sources. First, we obtain firms' financial information, including stock returns, prices, profitability, and other accounting information, from Datastream and Worldscope. Second, we use FactSet Ownership data to measure firms' institutional ownership and construct proxies for the presence and arrival of different types of blockholders.

Finally, we use ISS Voting Analytics to measure shareholder support for executive compensation and other management proposals and the extent to which shareholders, by submitting proposals opposed by management, may interfere with corporate strategy, potentially wasting managerial time. We also consider the frequency of shareholder-sponsored ESG proposals to evaluate the extent to which the firms' emphasis on ESG performance in compensation contracts can be viewed as a substitute for shareholders' initiatives on corporate sustainability.

Appendix A provides detailed definitions of all variables used in the analysis, while Table 1 reports summary statistics for the main variables.

2. Descriptive Evidence on Compensation Metrics Usage

Panel A of Figure 1 plots the proportion of firms in the ECA dataset that report at least one pay metric and those using ESG and other types of metrics. While previous literature has already highlighted the rise of ESG metrics (e.g., Cohen, Kadach, Ormazabal, and Reichelstein, 2023) – present in almost 40% of the sample firms by the end of the sample period – our findings reveal a much broader and largely overlooked phenomenon: over 80% of the companies report at least one compensation metric during the sample period, and this proportion remains constant. This widespread pattern extends beyond market metrics, which are typically linked to stock options and other equity-based compensation. The most common metrics are earnings and operating metrics, which have become much more frequently used, along with ESG metrics.

Panel B plots trends in ESG metrics for US and non-US (global) companies and also differentiates between European companies and those in regions outside the US and Europe. It shows that similar patterns hold internationally, even though the use of ESG metrics is less prevalent in the US.

Figure 2 shows that half of the ESG metrics can be classified as material according to the SASB materiality map. The proportion of material ESG metrics has remained constant as the propensity to assign ESG metrics has increased. Figure 3 shows how firms' inclination to consider different types of ESG metrics has evolved over time. It appears that the explosion in the use of ESG metrics has been driven by the SASB categories labeled Employee Health and Safety, and especially Employee Engagement, Diversity, and Inclusion. The sharp increase in diversity and inclusion targets coincides with the rise in board gender diversity, which in turn has been driven by several factors: increased public attention to gender equality (Giannetti and Wang, 2023),

introduction of board gender quotas in several countries⁴ (Ferrari et al, 2022; Ferreira et al, 2020), and campaigns initiated by major institutional investors in 2017 to promote gender diversity at the board level (Gormley et al, 2023). This suggests that the push for gender equality at the top is correlated with similar efforts to foster inclusivity across lower organizational ranks.

Figure 4 considers the use of various operating metrics which have experienced a modest increase during the sample period. The higher frequency in the application of operating metrics is due to the category *Other*, which includes specific metrics like the completion of individual projects and may reflect the growing effort by boards and compensation committees to provide more transparent explanations and rationales for executive pay decisions.

3. Which Firms Use Compensation Metrics?

3.1 ESG and Other Metrics

We start by exploring how the presence of ESG metrics is related to other features of the compensation contract. Panel A of Table 2 shows that companies that use ESG metrics also tend to use operating, earnings, and market metrics, indicating that ESG metrics are not different from other performance metrics. We obtain this result by simply correlating the different dummies for each type of metric in column 1 and by controlling for firm characteristics in column 2. Large firms that tend to have more complex operations and compensation contracts are more likely to make use of ESG metrics. Also, consistent with the theory (Holmström, 1979), firms with volatile market performance, as captured by the volatility of daily returns, measured as in Coles, Daniel, and Naveen (2006) and Bettis, Bizjak, Coles, and Kalpathy (2018), are more likely to use ESG metrics. The volatility of ESG news coverage tone appears to have little influence on the adoption

⁴ For instance, Italy and France adopted a gender quota in 2011 and Germany in 2015.

of ESG metrics, possibly because companies can mitigate this volatility by choosing appropriate ESG objectives and individual metrics. Interestingly, neither the presence of institutional blockholders nor a company's ESG performance appear to affect the use of ESG metrics. However, companies with a large non-institutional blockholder appear less inclined to use ESG metrics.

Columns 3 and 4 reveal that the factors influencing the use of material ESG metrics are similar to those for general ESG metrics, with the exception of the firm's ESG performance. Firms ranked below average on material ESG factors are more likely to feature material ESG metrics in the CEO contract. This suggests that CEOs are being incentivized to improve ESG dimensions that can have substantive impact on the economic value of the company and its financial risk-return profile.

Panel B examines the relationship between the number of metric types featured in a contract and the presence of equity-based compensation, or its ratio to total compensation. We perform these tests, including and excluding the market-based metrics in alternative specifications, because stock options and equity awards typically depend on market performance targets. All models show a positive correlation between the use of compensation metrics and equity-based compensation. Column 1 shows that, on average, firms employ approximately 0.29 additional compensation metrics when awarding equity to the CEO. Since the average firm uses just over two types of metrics, this represents a substantial 14.19% increase in the number of metrics employed. Similarly, the specification in column 2 indicates that a one-standard-deviation increase in the equity share is associated with an increase of about 0.13 metrics, corresponding to a 6.39% increase relative to the sample mean.

Consistent with the earlier findings, large companies use more compensation metrics, whereas companies with large non-institutional blockholders tend to use fewer. Additionally, the

number of metric types increases with higher ownership by institutional blockholders. These findings suggest that companies with more active external monitors, such as institutional blockholders, tend to provide more detailed explanations of the relationship between CEO achievement and pay.

Companies with a higher standard deviation of ESG news sentiment in a given year use more metrics, which we interpret as evidence that such companies not only attempt to provide shareholders with more information on the direction of their corporate strategy but also aim to focus managerial attention on the strategic aspects that the board considers important. In contrast, companies with volatile returns and profits tend to use fewer metrics in CEO compensation contracts, possibly because of the high exposure of financial performance to factors beyond managerial control. This appears consistent with evidence in Panel C that volatility in financial (especially, market) performance is positively correlated with the presence of ESG metrics but shows weaker associations with earnings and operating metrics. Thus, when traditional financial indicators are less reliable, boards appear to focus more on non-financial performance through ESG metrics.

Notably, the use of all metrics continues to be positively associated with equity-based compensation, indicating that these metrics always complement the broader goals of shareholder value and market performance in establishing CEO compensation.

Table 3 examines how changes in ownership are related to the usage of ESG metrics, considering all ESG metrics (in Panel A) and only material ESG metrics (in Panel B). Firms with new active blockholders, a category that includes hedge fund, private equity and venture capital investors, use more metrics. This finding, consistent with our earlier results on the presence of institutional blockholders and metrics usage, suggests that ESG metrics serve as a way to guide

and build consensus on corporate strategy. In contrast, companies with non-institutional blockholders are less inclined to use ESG metrics. The effects of ownership are not only statistically but also economically significant. An active blockholder's entry is associated with an approximately 9% higher likelihood that the compensation contract includes ESG metrics, relative to the unconditional probability of 22%. In contrast, the presence of a non-institutional blockholder is associated with about 21% lower likelihood of using ESG metrics (column 2).

We also consider CEO tenure, which is negatively associated with the usage of ESG metrics, although the economic effect is modest. This suggests that firms with longer-tenured CEOs do not need to rely as heavily on metrics to direct managerial strategy. Moreover, to the extent that the market learns about the CEO's abilities and corporate priorities (Pan, Wang, and Weisbach, 2015), firms may not need to communicate their strategy to shareholders through metrics as their CEOs' tenure increases.

ESG metrics also appear to be used by companies with high volatility in the sentiment of their ESG coverage. Consistent with the theory, we continue to find that companies with more volatile market performance use relatively more (material) ESG metrics.

To explore a particular ESG metric's choice, Table 4 considers a metric-level dataset to study how a firm selects which specific ESG metrics to include and when to do so. Since we have many observations for a firm during a year, we include firm fixed effects, thus holding constant a firm's propensity to use any type of metric. For this reason, slow-moving firm-level characteristics, such as ownership, tend to lose significance.

Panel A shows that firms are more likely to include an individual ESG metric when it is material, and that this tendency is even more pronounced when firms rank poorly in terms of their

ESG performance. This indicates that managers of underperforming firms are given incentives to improve performance along material ESG dimensions.

Panel B goes a step further and relates the introduction of specific ESG metrics to the sentiment of the ESG news covering that specific metric during the previous year. Notably, the results show that companies start subordinating executive compensation to specific ESG metrics on which they have outperformed during the previous year, regardless of whether such metrics are material for the company's performance or not. A one-standard-deviation increase of the metric-specific ESG news corresponds to a 0.43 percentage point increase in the probability that a firm will introduce a given metric (column 1). This represents a meaningful 71.13% increase relative to the unconditional probability of 0.6%. The overall sentiment of ESG news does not seem to have an economically meaningful effect, and its coefficient is, if anything, negative. In addition, it appears that firms that rank poorly in terms of their ESG performance are not more likely than other firms to select ESG metrics based on the news coverage of those particular metrics (columns 5 and 6). Rather, these firms are simply more likely to introduce material metrics.

In columns 3 and 6, we also consider whether firms are more likely to introduce a specific (material) ESG metric after experiencing a particularly bad performance on that dimension. We capture this by considering the minimum of the Pulse Score specific to a metric. The coefficient on this proxy is estimated to be very close to zero and, its sign, if anything, suggests that bad metric-specific news is associated with a lower likelihood of introducing a specific ESG metric. This indicates that positive news sentiment about a firm's ESG performance drives the inclusion of individual ESG metrics in compensation contracts.

In Panel C, we further investigate whether firms improve their ESG performance following the introduction of specific ESG metrics. The dependent variable is next year's sentiment of the

ESG news covered by the ESG metric that was introduced (e.g., greenhouse gas emissions). While establishing causality is challenging, as specific pay metrics could be introduced in anticipation of future good performance along a particular dimension, we observe that introducing an ESG metric is associated with a substantial improvement in the news sentiment about the firm's ESG performance. This holds even when controlling for the sentiment of news coverage along that particular metric during the previous two years. Specifically, the introduction of an ESG metric is associated with a 3.92% increase (column 1) in the sentiment of the ESG news covered by that metric, relative to the unconditional average of metric-specific news (60.48). However, firms that have introduced an ESG metric do not appear to leverage their past ESG performance more, as the interaction between *First ESG Metric* and the previous year's sentiment of ESG news on that particular dimension is not statistically significant in column 3. The effects are similar whether the metric is material or not (column 6).

Furthermore, even if firms that rank low for previous ESG performance (Bad ESG) continue to have less favorable news coverage on average, the news coverage of the contractual ESG metric appears to improve more if the newly adopted metric is material, as seen in columns 5 and 6. Interestingly, the tone of the firm's general ESG performance has a negative but smaller association with ESG improvement along the specific dimension of the new metric, suggesting that firms that face challenges in their ESG performance may focus on the metrics on which they fare better.

3.2 Operating Metrics

Panel A of Table 5 shows that companies with volatile sentiment about ESG news are more inclined to use operating metrics, similar to what we find for ESG metrics in Table 3. While the

positive relationship between the volatility of ESG sentiment and the use of operating metrics is highly statistically significant, the economic magnitude is much smaller than for the ESG metrics. A one-standard-deviation increase in the volatility of ESG news is associated with a 1.40 percentage point increase in the likelihood that the CEO's compensation contract includes an operating metric.

In addition, we consider how the acquisition of shares by a new (active) blockholder may influence the use of metrics. We find that the arrival of new active blockholders who may want to sway the corporate strategy is correlated with greater use of both ESG and operating metrics. Specifically, column 2 indicates that the entry of a new active blockholder raises the likelihood of incorporating an operating metric in the CEO's award structure by 2.23 percentage points, which represents an increase of approximately 3.54% relative to the unconditional probability of 0.63.

Panels B and C focus on earnings and market metrics, respectively. Earnings metrics appear to be used by companies with more volatile ESG news sentiment but whose return and profit volatilities are lower. Notably, the use of market metrics is not associated with various proxies for ESG news sentiment, return, and profit volatility. While companies with higher institutional block ownership are more likely to have market and earnings metrics, firms with new active blockholders are less likely to use them. This is consistent with evidence that active blockholders, including private equity investors and hedge funds, tend to rely on operating metrics (Brav, Jiang, and Li, 2022).

Table 6 considers individual operating and earnings metrics to gauge the conditions under which companies use these metric types. The results show that companies that lag behind their industry peers in terms of cashflows or sales tend to use more cashflow- or sales-based metrics, respectively. A one-standard-deviation decrease in the industry-adjusted cashflow-to-assets (sales-

to-assets) ratio is associated with a 2.27 (1.25) percentage point increase in the likelihood of employing cashflow (sales) metrics. This corresponds to a 10.0% (3.80%) increase relative to the unconditional probability of 0.227 (0.329) in the sample. However, only the volatility of industry-adjusted cashflows is negatively related to the use of cashflow-based metrics. Volatility appears to matter less for outcomes that are more closely connected to managerial actions, such as sales and fixed investment.

In Panel B, we see that companies with investment-based metrics tend to have higher industry-adjusted investment in property, plant, and equipment as a percentage of total assets, suggesting that the board is directing managers toward a more active investment strategy. Similarly, firms with higher industry-adjusted book leverage tend to include capital structure metrics in the CEO contract but less so when the volatility of book leverage is higher.

While the effects of institutional block ownership vary across different operational metrics, the presence of large non-institutional blockholders seems to be consistently negatively correlated with the use of any metrics. To the extent that non-institutional blockholders are more closely connected to management, this pattern suggests less need for these companies to explain CEO payouts and corporate strategy.

4. Consequences of Compensation Metrics on Actual Pay

We explore to what extent companies with ESG metrics compensate their executives for good ESG performance more than other companies. We measure ESG performance using the sentiment of TruValue news over the previous year. In particular, we test the extent to which the compensation of executives at firms with especially good recent performance increases and how the inclusion of ESG metrics affects the pay sensitivity to ESG and other measures of performance.

To test whether ESG metrics matter, we define a new variable, *Metric News*, that considers only the sum of the TruValue news associated with the specific metrics incorporated in the compensation contract. We also consider the extent to which compensation depends on news that is viewed as material for a given firm.

In Table 7, Panel A, it appears that total compensation and the components of variable compensation, including bonus and payouts of stock and options, increase with ESG performance. Specifically, a one-standard-deviation improvement in ESG performance is associated with a 2.28% increase in the CEO's total compensation⁵, as indicated by the specification in column 1. Similarly, column 3 suggests that the same improvement is associated with a 3.32% increase in option awards and restricted stock grants. The impact of metric-specific news, that is, news about the specific ESG metrics explicitly included in the CEO's compensation contract, is similar to that of general ESG news coverage, with corresponding increases of 2.70% in total compensation and only 1.61% increase in option awards and restricted stock grants.

In columns 4 to 6, we also include a variable capturing the sentiment of all material ESG news for the company. Material ESG news appears to matter for payouts to executives over and above general ESG news and is more relevant than the news considered in the metrics. Column 4 indicates that a one-standard-deviation increase in material ESG news is associated with a 3.94% increase in the CEO's total compensation. In comparison, the corresponding increases for general ESG news and metric-specific ESG news are smaller – 1.25% and 2.70%, respectively.

Panel B presents similar specifications as those reported in Panel A, controlling for the four metric type dummies. Interestingly, while companies that use market, earnings, and operating metrics compensate their executive more, the ESG metric dummy does not affect compensation.

⁵ More precisely, the economic magnitude can be calculated as $\exp(\text{coef} \times \text{sd}) - 1 = \exp(0.0029 \times 7.782) - 1 = \exp(0.02257) - 1 = 2.28\%$.

This does not support the concern that ESG metrics are used for CEO rent extraction. Furthermore, we observe that controlling for the metric dummies reduces the relevance of *Metric News*, which is now positively related only to total compensation but not to the various components of variable compensation.

Panel C introduces an interaction between ESG metric and the firm's past returns to study whether the inclusion of any ESG-related metric affects the sensitivity of compensation to financial performance. Even though having an ESG metric appears to have a positive effect on total and variable compensation (with the exception of bonus payments), the interaction with past return is never statistically significant and close to zero in magnitude, indicating that ESG metrics do not significantly affect the level and structure of compensation. Similarly, in Table A1, we find that the inclusion of sales, profitability, or efficiency metrics in a compensation contract raises total and variable compensation. However, the interactions of these metrics with various performance measures are always insignificant, indicating that the inclusion of sales, profitability or efficiency metrics does not affect the sensitivity of compensation to firm performance.

Overall, these results suggest that ESG performance positively affects compensation in all companies but that the presence of ESG and other metrics has limited effects on the sensitivity of total and variable compensation to ESG and financial performance. In addition, while a higher number of metric types is associated with higher compensation, this association does not hold for ESG metrics, suggesting that the use of ESG metrics is unlikely to be linked to rent extraction. The correlation between more metric types and higher pay suggests a need to explain the reasons for high CEO pay to shareholders and market participants. In the next section, we test this novel rationale for why metrics are used in executive contracts.

5. Compensation Metrics and Shareholder Consensus

5.1 *Say-on-Pay and Shareholder Dissent*

Spurred by criticisms of the increasing level of CEO compensation, many countries around the world have introduced shareholder votes on the compensation of executives. The so-called say-on-pay is a vote on executive pay and its relationship to firm performance. It has been compulsory in the UK since 2002, and in the US since 2011 with the Dodd-Frank Act. Shareholders vote on the actual executive remuneration or compensation policy, and their vote may be advisory or binding, depending on the jurisdiction.

Regardless of the specific implementation, the say-on-pay vote can be viewed as a measure of the shareholders' support for a company's strategy (Cuñat, Giné, and Guadalupe, 2016). While say-on-pay votes have been introduced to align the compensation policy of public firms with the interests of shareholders, critics of shareholders' say-on-pay votes argue that they interfere with the firm's corporate strategy and the board's role in a way that can potentially cause high costs to corporations. We conjecture that compensation metrics may help explain to outside shareholders the performance targets based on which executives are rewarded and build consensus around the compensation contract, thus limiting outside interference with corporate strategy.

To evaluate this conjecture, columns 1 and 2 of Table 8, Panel A, consider the average support for management-sponsored say-on-pay proposals voted at a company's annual meeting. Following previous literature, we include controls for the level of total compensation and the company's previous returns, as shareholders are known to disagree with particularly generous compensation packages and oppose management when firms perform poorly (Ertimur, Ferri, and Oesch, 2013). We also control for the companies' market capitalization, as compensation is expected to be higher in larger, more complex companies (e.g., Edmans, Gabaix, and Jenter, 2017).

Our variables of interest are proxies for the details of compensation targets specified in the contract. Specifically, we include the number of broad metric types and the overall number of individual metrics.

Both the number of broad metric categories and the number of specific metrics included in the contract increase shareholder support for management-sponsored say-on-pay proposals. As shown in column 1 of Panel A in Table 8, adding an additional broad metric type to a compensation contract is associated with a 0.49 percentage point increase in the mean say-on-pay approval rate. Similarly, column 2 indicates that including an additional specific metric type is linked to a 0.20 percentage point increase in the approval rate. The relatively small effects reflect that dissent on say-on-pay votes is typically low, as the average approval rate of say-on-pay proposals is 90.84%.

However, in Panel B, we also find that firms tend to increase the number of broad metric categories and the number of specific metrics included in the CEO's contract following shareholder disapproval of say-on-pay proposals. The effect appears to be larger in magnitude if the company has experienced higher disapproval rates over a longer period of time (three years in even-numbered columns vs. one year in odd-numbered columns). This result confirms that firms introduce compensation metrics to communicate their corporate strategy to shareholders and build shareholder consensus.

To evaluate the significance of compensation metrics, we examine other manifestations of shareholder dissent. Columns 3 and 4 of Table 8, Panel A, consider the average vote against managerial proposals in a given year as a measure of shareholder dissent against the corporate strategy. Consistent with our earlier results, we find that a higher number of metrics in the executive contracts is associated with less dissent. The effect is not only statistically but also economically significant. As shown in column 3, adding an additional broad metric type reduces

the average vote against management by 0.41 percentage points, equivalent to 7.2% lower shareholder dissent relative to the mean dissent of 5.7%. Similarly, including an additional specific metric type is associated with a decrease of 0.18 percentage points, as indicated in column 4.

Panel C tests whether different types of metrics have varied effects on shareholder support. Under our conjecture that compensation metrics serve the main objective of explaining the corporate strategy, we would not expect ESG, operating, market, and earnings metrics to have different effects. To test this, we add the number of each metric type to the earlier specifications. We find that only the total number of metrics increases shareholder support for say-on-pay proposals and decreases shareholder dissent on management proposals, indicating that different metric types perform similar communication functions.

5.2 ESG and Other Shareholder Proposals

Shareholder proposals are a form of low-cost shareholder activism addressing various corporate issues, including governance (e.g., executive pay, takeover defenses, board independence), stakeholder matters (e.g., labor union, supply chain), and other ESG concerns. However, shareholder proposals generally create little value because of their inconsistent quality and individual shareholders' limited understanding of corporate strategy (Denes, Karpoff, and McWilliams, 2017; Gantchev and Giannetti, 2021). Enhanced disclosure of a firm's strategy increases the amount of information available to shareholders and may reduce the number of unwanted and misinformed shareholder proposals. Thus, if compensation metrics effectively illustrate a company's corporate strategy, we should observe fewer shareholder proposals in firms with more detailed compensation metrics.

We first consider ESG proposals, which rarely pass and can therefore be considered a nuisance for the firm's management that has to address their relevance in shareholder meetings (Michaely, Ordonez-Calafi, and Rubio, 2024). Panel A of Table 9 shows that not only ESG metrics but all types of metrics are negatively associated with the probability that a company receives a shareholder-sponsored ESG proposal. Disclosing an ESG metric in the CEO's compensation contract reduces the likelihood of receiving such proposals by approximately two percentage points, equivalent to a 17.54% (column 1) and 12.00% (column 2) lower probability of receiving an ESG proposal based on the unconditional probability of 12.83% in the sample. The effect is even more pronounced when the disclosed ESG metric is material, as indicated in columns 3 and 4. The disclosure of operating and earnings metrics also reduces the likelihood of ESG proposals by around 2-3 percentage points, as shown in columns 2 and 4. Interestingly, while the disclosure of market metrics in compensation contracts also decreases the likelihood of receiving a shareholder-sponsored ESG proposal, the effect is smaller than that for the other metric types. Additionally, positive news related to the firm's ESG performance decreases the probability of an ESG proposal, and the effect is substantial in terms of economic magnitude. For instance, a one-standard-deviation improvement in ESG performance is associated with a 4.67% decrease in the probability of receiving an ESG proposal (column 2), corresponding to 36.40% of the unconditional probability in the sample.

Panel B considers all shareholder-sponsored proposals and those opposed by management, which are likely to be particularly misinformed and clash with the firm's corporate strategy. We find that both the number of metric types and the number of specific metrics are negatively associated with shareholders' propensity to submit proposals. Adding an additional broad metric type to the CEO's compensation contract is associated with a decrease of approximately 0.029 in

the total number of shareholder proposals and a decrease of 0.034 in the number of proposals opposed by management, as shown in columns 1 and 3. The economic magnitudes represent 16.67% and 25.19% lower probability of receiving a shareholder proposal or a proposal opposed by management, respectively. In this case, positive sentiment about the firm's ESG performance is also associated with a decrease in the probability of shareholder-sponsored proposals and proposals opposed by management, but the economic magnitudes are relatively modest – 1.37% (column 1) of the unconditional probability of receiving a shareholder proposal (17.4% in the sample) and 1.78% (column 3) of the probability of receiving a proposal opposed by management (13.5%).

Naturally, the effects of adding a new individual metric type are smaller, but still highly economically meaningful, with decreases of 0.014 in the total number of proposals (column 2) and 0.016 in those opposed by management (column 4). These correspond to an 8.21% and 12.07% lower probability of receiving a proposal, respectively, based on the unconditional probability of receiving a shareholder proposal (opposed by management).

Overall, the evidence supports our conjecture that metrics are used to communicate corporate strategy and justify CEO compensation, with the objective of building consensus among investors.

5 Conclusions

Existing literature primarily focuses on how bonus, stock, and option awards affect the sensitivity of a CEO's pay to a firm's market performance and earnings, with the objective of aligning managerial incentives and shareholder interests. In contrast, we focus on the broad range

of metrics featured in executive contracts and argue that the recent proliferation of ESG metrics must be interpreted in the context of the usage of other metrics.

While contractual metrics have limited effects on the sensitivity of CEO pay to specific performance outcomes, they play a crucial role in reducing shareholder dissent on compensation and other managerial proposals. By building consensus and increasing shareholder awareness of corporate strategy, they also decrease the probability of shareholder proposals opposed by management, suggesting that compensation metrics are mainly used to create consensus on CEO pay and align corporate strategy with shareholders' expectations.

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Appendix A: Variable Definition

Variable	Definition	Source
<i>Compensation Variables</i>		
ESG Metric	Indicator variable equal to one if the compensation contract of a firm's CEO includes at least one ESG metric in a given year, and zero otherwise.	ISS Executive Compensation Analytics (ECA)
Material ESG Metric	Indicator variable equal to one if the compensation contract of a firm's CEO includes at least one ESG metric in a given year that is material for the firm, and zero otherwise. Materiality is determined by SASB.	ISS ECA
First ESG Metric (<i>firm-year-metric-level</i>)	Indicator variable equal to one if the compensation contract of a firm's CEO includes a specific ESG metric for the first time, and zero otherwise.	ISS ECA
First Material ESG Metric (<i>firm-year-metric-level</i>)	Indicator variable equal to one if the compensation contract of a firm's CEO includes a material ESG metric for the first time, and zero otherwise. Materiality is determined by SASB.	ISS ECA
Operating Metric	Indicator variable equal to one if the compensation contract of a firm's CEO includes at least one operating metric in a given year, and zero otherwise. Operating metrics include metrics related to sales, investment, efficiency, and capital structure.	ISS ECA
Earnings Metric	Indicator variable equal to one if the compensation contract of a firm's CEO includes at least one earnings metric in a given year, and zero otherwise. Earnings metrics include metrics related to profitability and cashflow.	ISS ECA
Market Metric	Indicator variable equal to one if the compensation contract of a firm's CEO includes at least one market-related metric in a given year, and zero otherwise.	ISS ECA
Num Metric Types	Sum of different types of compensation metrics included in a CEO's contract in a given year. There are 4 types of metrics – ESG, operating, earnings, and market.	ISS ECA
Num Metric Types Excl. Mkt	Sum of different types of compensation metrics included in a CEO's contract in a given year, excluding the market metric.	ISS ECA
Num Indiv. Metrics	Sum of individual compensation metrics included in a CEO's contract in a given year. These include 26 SASB categories of ESG metrics, 5 categories of operating metrics, 2 categories of earnings metrics, and a market metric.	ISS ECA
Num ESG Metrics	Sum of up to 26 SASB categories of ESG metrics included in the compensation contract of a firm's CEO in a given year.	ISS ECA
Num Operating Metrics	Sum of up to 5 operating metrics included in the compensation contract of a firm's CEO in a given year.	ISS ECA
Num Earnings Metrics	Sum of up to 2 earnings metrics included in the compensation contract of a firm's CEO in a given year.	ISS ECA
Equity Comp	Indicator variable equal to one if the compensation contract of a firm's CEO includes stock options or restricted stock grants, and zero otherwise.	ISS ECA
Share of Equity Comp	Ratio of stock options and restricted stock grants divided by CEO's total compensation in a given year.	ISS ECA
Cashflow Metric	Indicator variable equal to one if the compensation contract of a firm's CEO includes a cashflow metric in a given year, and zero otherwise.	ISS ECA

Profitability Metric	Indicator variable equal to one if the compensation contract of a firm's CEO includes a profitability metric in a given year, and zero otherwise.	ISS ECA
Sales Metric	Indicator variable equal to one if the compensation contract of a firm's CEO includes a sales metric in a given year, and zero otherwise.	ISS ECA
Efficiency Metric	Indicator variable equal to one if the compensation contract of a firm's CEO includes an efficiency metric in a given year, and zero otherwise.	ISS ECA
Investment Metric	Indicator variable equal to one if the compensation contract of a firm's CEO includes an investment metric in a given year, and zero otherwise.	ISS ECA
Capital Structure Metric	Indicator variable equal to one if the compensation contract of a firm's CEO includes a capital structure metric in a given year, and zero otherwise.	ISS ECA
Total Comp	Log of a CEO's total compensation in a given year.	ISS ECA
Stock + Options + Bonus	Log of a CEO's option awards, restricted stock grants, and bonus in a given year.	ISS ECA
Stock + Options	Log of a CEO's option awards and restricted stock grants in a given year.	ISS ECA
ESG News Variables		
St. Dev. All Pulse News	Standard deviation over a firm's fiscal year of daily TruValue Pulse Score that aggregates ESG related news in all SASB categories.	FactSet TruValue
Metric-specific Pulse News (<i>firm-year-metric-level</i>)	Maximum over a firm's fiscal year of daily TruValue Pulse Score in a specific SASB category of ESG news.	FactSet TruValue
All Categories Pulse News	Maximum over a firm's fiscal year of daily TruValue Pulse Score across all SASB categories of ESG news.	FactSet TruValue
Bad All Categories Pulse News	Minimum over a firm's fiscal year of daily TruValue Pulse Score across all SASB categories of ESG news.	FactSet TruValue
Material Pulse News	Maximum over a firm's fiscal year of daily TruValue Pulse Score across SASB categories of ESG news that are material for a firm.	FactSet TruValue
Bad Material Pulse News	Minimum over a firm's fiscal year of daily TruValue Pulse Score across SASB categories of ESG news that are material for a firm.	FactSet TruValue
Metric News	Sum of the maximum over a firm's fiscal year of the news associated with the specific metrics incorporated in the CEO compensation contract.	FactSet TruValue
Below Avg ESG Rank	Indicator variable equal to one if a company is "Below Average" or "Laggard" based on industry percentiles across all SASB categories of ESG news.	FactSet TruValue
Below Avg Material ESG Rank	Indicator variable equal to one if a company is "Below Average" or "Laggard" based on industry percentiles across SASB categories of ESG news that are material for a firm.	FactSet TruValue
Other Variables		
3-yr return	Firm's return, including dividends, over the past three years.	Worldscope
Log(Var Daily Returns)	Log of the variance of daily stock returns.	Datastream
St. Dev. Ind-adj. ROE	Rolling five-year standard deviation of country-industry-year-adjusted return on equity.	Worldscope
Log Mkt Cap	Log of the firm's market capitalization.	Worldscope

Inst Block Own	Combined ownership of a firm's equity by institutional owners with at least 5% ownership stakes.	FactSet Ownership
Large Non-Inst Block	Indicator variable equal to one if at least one non-institutional owner of a firm's equity exceeds 10% ownership.	FactSet Ownership
New 1% (5%) Block	Indicator variable equal to one if in a given year, at least one new institutional owner acquires a stake of a firm's equity exceeding 1% (5%).	FactSet Ownership
New 1% (5%) Active Block	Indicator variable equal to one if in a given year, at least one new active institutional owner acquires a stake of a firm's equity exceeding 1% (5%). Active owners are hedge funds, private equity, and venture capital.	FactSet Ownership
CEO Tenure	The difference in years between the year in which an executive assumes the CEO role and the current fiscal year.	ISS ECA
Mean Say-on-Pay Approval	Average pass rate of say-on-pay management proposals in a given year.	ISS Voting Analytics
Avg. Vote Against Mgmt	Average rate of "against" vote on all management proposals in a given year.	ISS Voting Analytics
ESG Proposal	Indicator equal to one if a firm receives at least one shareholder-sponsored ESG proposal in a given year.	ISS Voting Analytics
Num Shareholder Prop	Number of all shareholder-sponsored proposals (excluding proxy contests) submitted to a firm in a given year.	ISS Voting Analytics
Num Shareholder Prop (Mgmt. Rec Against)	Number of all shareholder-sponsored proposals (excluding proxy contests) submitted to a firm in a given year for which management recommends a vote "against".	ISS Voting Analytics
Ind-adj. CF/Assets	Ratio of a firm's cashflow to total assets, adjusted by subtracting the country-industry-year mean.	Worldscope
St. Dev. Ind-adj. CF/Assets	Rolling five-year standard deviation of country-industry-year-adjusted ratio of a firm's cashflow to total assets.	Worldscope
Ind-adj Profitability	Ratio of a firm's operating income before depreciation to total assets, adjusted by subtracting the country-industry-year mean.	Worldscope
St. Dev. Ind-adj Profitability	Rolling five-year standard deviation of country-industry-year-adjusted ratio of a firm's operating income before depreciation to total assets.	Worldscope
Ind-adj Sales/Assets	Ratio of a firm's sales to total assets, adjusted by subtracting the country-industry-year mean.	Worldscope
St. Dev. Ind-adj Sales/Assets	Rolling five-year standard deviation of country-industry-year-adjusted ratio of a firm's sales to total assets.	Worldscope
Ind-adj. COGS/Sales	Ratio of a firm's cost of goods sold to total assets, adjusted by subtracting the country-industry-year mean.	Worldscope
St. Dev. Ind-adj. COGS/Sales	Rolling five-year standard deviation of country-industry-year-adjusted ratio of a firm's cost of goods sold to total assets.	Worldscope
Ind-adj. PPE/Assets	Ratio of a firm's property, plant and equipment to total assets, adjusted by subtracting the country-industry-year mean.	Worldscope
St. Dev. Ind-adj. PPE/Assets	Rolling five-year standard deviation of country-industry-year-adjusted ratio of a firm's property, plant and equipment to total assets.	Worldscope
Ind-adj. Book Leverage	Ratio of a firm's total debt to total assets, adjusted by subtracting the country-industry-year mean.	Worldscope
St. Dev. Ind-adj. Book Leverage	Rolling five-year standard deviation of country-industry-year-adjusted ratio of a firm's total debt to total assets.	Worldscope

Appendix B. Examples of metric descriptions

This appendix presents examples of disclosed metrics from executive compensation contracts and illustrates how we use the dictionary in Appendix C to classify these metrics into various types – ESG, earnings, operating, and market metrics, which include our 31 specific metric categories. Compensation data are obtained from Executive Compensation Analytics (ECA) provided by Institutional Shareholder Services (ISS). The international sample includes firms from 34 countries from 2011 to 2021.

Company	Year	Metric Description	Specific Metric Type	Broad Metric Type
EMCOR Group, Inc.	2021	Continue to emphasize long-term goal of a 20 percent per capita reduction in GHG by 2035	GHG Emissions	ESG
Liontrust Asset Management Plc	2020	Improve gender diversity at senior levels and introduction of measures to increase gender diversity in the recruitment process	Employee Engagement, Diversity & Inclusion	ESG
Barloworld Ltd.	2021	Safety through targets that included zero fatalities and achievement of LTIFR targets	Employee Health & Safety	ESG
Endo International Plc	2020	Deliver on year-end 2020 net debt leverage ratio objectives	Capital Structure	Operating
Laredo Petroleum, Inc.	2016	General and administrative expense (\$/BOE)	Efficiency	Operating
Kosmos Energy Ltd.	2019	Project Capital Expenditure (CapEx) of less than \$500 million	Investment	Operating
The Descartes Systems Group Inc.	2014	Cash generated from operations	Cashflow	Earnings
Aimia Inc.	2019	TSR relative to the companies in the TSX Small Cap Index	Market	Market

Appendix C. Dictionary for classifying ESG and other compensation metrics

This appendix lists the set of keywords we use to classify firms' disclosed compensation metrics into broad category types – ESG, earnings, operating, and market metrics and then in 31 specific categories. Compensation data are obtained from Executive Compensation Analytics (ECA) provided by Institutional Shareholder Services (ISS). The international sample includes firms from 34 countries from 2011 to 2021.

ESG Keywords

(1)	AAIR (Average Accident Incident Rate)	(58)	BEE (Black Economic Empowerment)	(109)	CHESM (Contractor Health Environmental Safety Management)
(2)	abatement	(60)	behaving	(110)	child
(3)	abating	(61)	behavior	(111)	CIFR (Critical Incident Frequency Rate)
(4)	Aboriginal	(62)	behavior-based	(112)	CIGS (Copper Indium Gallium Selenide)
(5)	ACCC (Australian Competition and Consumer Commission)	(63)	behavioral	(113)	circular
(6)	access	(64)	behaviors	(114)	circularity
(7)	accessible	(65)	beneficial	(115)	citizenship
(8)	accident	(66)	BIFR (Brambles Injury Frequency Rate)	(116)	clean
(9)	accidents	(67)	bio	(117)	cleaner
(10)	adopt	(68)	biodiversity	(118)	cleantech
(11)	adverse	(69)	biofuel	(119)	climate
(12)	advertising	(70)	biomass	(120)	climate-positive
(13)	affordability	(71)	biosecurity	(121)	climate-related
(14)	affordable	(72)	BIPOC (Black, Indigenous and People of Color)	(122)	climates
(15)	AFR (Accident Frequency Rate)	(73)	black	(123)	climatic
(16)	African	(74)	breach	(124)	CMVI (Controllable Motor Vehicle Incidents)
(17)	aid	(75)	breaches	(125)	CNMC (Comisión Nacional de los Mercados y la Competencia)
(18)	AIFR (All Injury Frequency Rate)	(76)	BREEAM (Building Research Establishment Environmental Assessment Method)	(126)	CO (carbon monoxide)
(19)	air	(77)	bribery	(127)	CO2
(20)	AIRR (All Incident Recordable Rate)	(78)	BSEE (Bureau of Safety and Environmental Enforcement)	(128)	CO2 emission
(21)	alarms	(79)	bullying	(129)	CO2-equivalent
(22)	alert	(80)	bushfire	(130)	CO2-reduced
(23)	all-electric	(81)	CAHPS (Consumer Assessment of Healthcare Providers and Systems)	(131)	CO2 reduction
(24)	all-employee	(82)	CAIDI (Customer Average Interruption Duration Index)	(132)	CO2e
(25)	all-injury	(83)	carbon	(133)	CO2eq
(26)	allegations	(84)	carcinogens	(134)	coal-based
(27)	AML (anti-money laundering)	(85)	care	(135)	coal-exit
(28)	animal	(86)	caseload	(136)	collaborate
(29)	antibias	(87)	catastrophic	(137)	collaborative
(30)	antibribery	(88)	catchment	(138)	collaboratively
(31)	anticorruption	(89)	CCUS (Carbon Capture, Utilization, and Storage)	(139)	collaborators
(32)	antidumping	(90)	CCV (critical control verification)	(140)	colleague
(33)	antimicrobial	(91)	CDC (Centers for Disease Control and Prevention)	(141)	colleagues
(34)	anti-money	(92)	CDIs (Community Development Initiatives)	(142)	collision
(35)	antiracist	(93)	CDP (Carbon Disclosure Project)	(143)	collisions
(36)	antislavery	(94)	CE marking	(144)	color
(37)	antitrust	(95)	Celsius	(145)	colored
(38)	arsenic	(96)	censure	(146)	commit
(39)	ASAO (Administrative Settlement Agreement and Order on Consent)	(97)	certificates	(147)	committed
(40)	assault	(98)	certification	(148)	committing
(41)	assistance	(99)	certifications	(149)	communities
(42)	assisting	(100)	certified	(150)	community
(43)	atmosphere	(101)	CFC (chlorofluorocarbon)	(151)	community-backed
(44)	attitude	(102)	CFPB (Consumer Financial Protection Bureau)	(152)	commuting
(45)	attitudes	(103)	CG (Corporate Governance)	(153)	competition
(46)	audit	(104)	CGA (Culture, Governance, and Accountability)	(154)	complaint
(47)	auditing	(105)	chargeable	(155)	complaints
(48)	auditors	(106)	charitable	(156)	complex-recycling
(49)	authority's	(107)	charities	(157)	compliance
(50)	avoidable	(108)	charity	(158)	compliances
(51)	avoidance			(159)	compliant
(52)	awareness			(160)	compliantly
(53)	AWRCR (All Worker Recordable Case Rate)			(161)	complying
(54)	BaCE (Building a Community of Equity)			(162)	compostable
(55)	BAIR (Bristow Aircraft Incident Rate)			(163)	concerns
(56)	BAME (Black, Asian, and Minority Ethnic)			(164)	conflict
(57)	B-BBEE (Broad-Based Black Economic Empowerment)			(165)	conflicts
				(166)	conservancy
				(167)	conservation

(168)	consumed	(234)	EACC (Ethics and Anti-Corruption Commission)	(298)	environmentally
(169)	consumer			(299)	environmentally-friendly
(170)	consumption	(235)	e-buses	(300)	environments
(171)	contaminated	(236)	eco	(301)	EOS (employee opinion survey)
(172)	contamination	(237)	eco-design	(302)	EPC (energy performance certificate)
(173)	cooperation	(238)	eco-efficient	(303)	equality
(174)	COP21	(239)	eco-labeled	(304)	equitable
(175)	CORESafety	(240)	ecological	(305)	ergonomic
(176)	corporate social responsibility	(241)	ecologically	(306)	ERIF (Environmental Recordable Incident Frequency)
(177)	corrupt	(242)	ECOLOGO		
(178)	corruption	(243)	ecosystem	(307)	ESCG (Environment, Social, and Corporate Governance)
(179)	coworker	(244)	EcoVadis		
(180)	CPMM (crashes per million miles)	(245)	educate	(308)	ESCMP (Environmental and Safety Compliance Management Program)
(181)	CRD (Credit Requirements Directive)	(246)	educating		
(182)	credible	(247)	education	(309)	ESE (Environmental, Social, and Economic)
(183)	Cree	(248)	educational		
(184)	CRI (Compliance Risk Index)	(249)	EEAFR (Environmental Enforcement Action Frequency Rate)	(310)	ESG
(185)	crime			(311)	ESG reporting
(186)	criticality	(250)	efficiencies	(312)	ESG targets
(187)	CSA (Corporate Sustainability Assessment)	(251)	efficiency	(313)	ESG-criteria
(188)	CSAP (Climate Strategy and Action Plan)	(252)	efficient	(314)	ESG-dedicated
		(253)	EHS (Environment, Health, and Safety)	(315)	ESG-integrated
(189)	CSR (corporate social responsibility)	(254)	EHS-related (Environmental, Health, and Safety-related)	(316)	ESG-oriented
(190)	CTF (Counter-Terrorism Financing)			(317)	ESG-related
(191)	cultivate	(255)	EHSS (Environment, Health, Safety, and Sustainability)	(318)	ESPC (Energy Savings Performance Contracting)
(192)	cultural			(319)	Ethibel
(193)	culture	(256)	EI (Engagement Index/Environmental Incident)	(320)	ethic
(194)	CVIR (Chargeable Vehicle Incident Rate)	(257)	EIA (Environmental Impact Assessment)	(321)	ethical
(195)	CWI (Community Workforce Initiative)			(322)	ethically
		(258)	EIR (Environmental Incident Rate)	(323)	ethics
(196)	cyber	(259)	elearning	(324)	EthiFinance
(197)	cybersecurity	(260)	electric	(325)	ethnic
(198)	D&I (Diversity and Inclusion)	(261)	electrical	(326)	ethnically
(199)	damage	(262)	electricity	(327)	ethnicity
(200)	damages	(263)	electrification	(328)	e-trucks
(201)	danger	(264)	ELMUS (Executive-Level Minorities, U.S.)	(329)	EV (electric vehicle)
(202)	dangerous			(330)	EV charging (electric vehicle charging)
(203)	DART (Days Away, Restricted, or Transferred/Days Away Restricted Time)	(265)	ELWG (Executive-Level Women, Global)	(331)	EXI (employee experience index)
		(266)	EMAS (Eco-Management and Audit Scheme)	(332)	fair
(204)	Days Away Restricted Time			(333)	fairly
(205)	deadly	(267)	emergencies	(334)	family
(206)	deaths	(268)	emergency	(335)	fatal
(207)	decarbonization	(269)	emission	(336)	fatalities
(208)	decarbonized	(270)	emissions	(337)	fatality
(209)	decarbonization	(271)	emitted	(338)	fatigue
(210)	DEI (Diversity, Equity, and Inclusion)	(272)	empathetic	(339)	fatigue-violation
(211)	demographic	(273)	employability	(340)	FCA (Financial Conduct Authority)
(212)	demographics	(274)	employee	(341)	FCPA (Foreign Corrupt Practices Act)
(213)	derailments	(275)	employee-based	(342)	female
(214)	dielectric	(276)	employee-evaluation	(343)	female-owned
(215)	diesel	(277)	employee-initiated	(344)	females
(216)	DIFR (Disabling Injury Frequency Rate)	(278)	employee-led	(345)	feminization
		(279)	employees	(346)	feminizing
(217)	dioxide	(280)	employer	(347)	fiduciary
(218)	DIR (Disabling Injury Rate)	(281)	employers	(348)	FIR (Fatality Incident Rate)
(219)	disability	(282)	employment	(349)	fire
(220)	disaster	(283)	energy	(350)	fire-related
(221)	discrimination	(284)	energy	(351)	fires
(222)	disposal	(285)	engage	(352)	Fitwel
(223)	disposals	(286)	engaged	(353)	flooding
(224)	disturbance	(287)	engagement	(354)	FOFA (Future of Financial Advice)
(225)	diverse	(288)	engagements	(355)	food
(226)	diversity	(289)	engages	(356)	foods
(227)	DJSI (Dow Jones Sustainability Indices)	(290)	engaging	(357)	footprint
		(291)	engender	(358)	footprinting
(228)	DJSIW (Dow Jones Sustainability Index World)	(292)	enjoyable	(359)	forest
		(293)	ENSR (Energia Non Servita di Riferimento)	(360)	forestry
(229)	DOJ (Department of Justice)			(361)	FOS (Financial Ombudsman Service)
(230)	donations	(294)	environment	(362)	foster
(231)	DOT (Department of Transportation)	(295)	environment-linked	(363)	fostering
(232)	drops	(296)	environmental	(364)	fosters
(233)	e-waste	(297)	environmental-related	(365)	freedom
				(366)	frequency

(367)	freshwater	(426)	HESS (Health, Environment, Safety, and Security)	(477)	incidence
(368)	FSI (Fatal and Serious Injuries)			(478)	incidences
(369)	FTSE4Good	(427)	high-hazard	(479)	incident
(370)	FVR (Fatigue-Violation Rate)	(428)	high-severity	(480)	incident-based
(371)	GAIA	(429)	HIPAA (Health Insurance Portability and Accountability Act)	(481)	incidents
(372)	Gallup			(482)	inclusion
(373)	Gallup's	(430)	HIRR (Hazard Identification Reporting Rate)	(483)	inclusion-related
(374)	gaps			(484)	inclusiveness
(375)	gas outages	(431)	HIV	(485)	inclusivity
(376)	GCA (Governance, Culture, and Accountability)	(432)	HMDA (Home Mortgage Disclosure Act)	(486)	Indigenous
(377)	gCO2	(433)	homes	(487)	infractions
(378)	gCO2e	(434)	hospice	(488)	inhalable
(379)	GDPR (General Data Protection Regulation)	(435)	hospital	(489)	injuries
(380)	GED (General Educational Development)	(436)	hospitality	(490)	injury
(381)	gender	(437)	hospitalization	(491)	Innu
(382)	Gender-Equality Index	(438)	house	(492)	inpatient
(383)	GHG	(439)	housing	(493)	inspires
(384)	GHG-related	(440)	HPI (High-Potential Incident)	(494)	integrity
(385)	GHGE	(441)	HPIFR (High-Potential Incident Frequency Rate)	(495)	intensity
(386)	GMDSS (Global Maritime Distress and Safety System)	(442)	HPIs (High-Potential Incidents)	(496)	interpersonal
(387)	GMP (Good Manufacturing Practice)	(443)	HPN (High-Performing Norm)	(497)	Inuit
(388)	GMP-compliant (Good Manufacturing Practice-compliant)	(444)	HQE (Haute Qualité Environnementale)	(498)	involvement
(389)	GMP-ready (Good Manufacturing Practice-ready)	(445)	HRA (Health Risk Assessment)	(499)	IOSA (IATA Operational Safety Audit)
(390)	GMR (Global Minimum Requirements)	(446)	HRI (High-Risk Incident)	(500)	ISO-compliance
(391)	governance	(447)	HSE (Health, Safety, and Environment)	(501)	ISP (Incidents with Serious Potential)
(392)	GPG (gender pay gap)	(448)	HSEC (Health, Safety, Environment, and Community)	(502)	ISS ESG
(393)	green	(449)	HSEIP (Health, Safety, and Environment Improvement Plan)	(503)	ISS ESG rating
(394)	greener	(450)	HSEMS (Health, Safety, and Environment Management System)	(504)	ISS-oekom
(395)	greenhouse	(451)	HSEQ (Health, Safety, Environment, and Quality)	(505)	JCI (Joint Commission International)
(396)	greening			(506)	job
(397)	GRESB (Global Real Estate Sustainability Benchmark)	(452)	HSER (Health, Safety, Environment, and Regulatory)	(507)	job-safety
(398)	GRI (Global Reporting Initiative)	(453)	HSES (Health, Safety, Environment, and Sustainability/Health, Safety, and Environmental Standards/Health, Safety, Environment, and Security)	(508)	jobs
(399)	GSCOP (Grocery Supply Code of Practice)			(509)	JSEA (Job Safety and Environmental Analysis)
(400)	GWh			(510)	justice
(401)	GxP (Good x Practice)	(454)	HSMSO (Health and Safety Management System Objective)	(511)	kCO2
(402)	HACT (Housing Associations' Charitable Trust)	(455)	HSS (Health, Safety, and Sustainability)	(512)	kgCO2
(403)	happier			(513)	kgCO2e
(404)	happiness	(456)	HSSD (Health, Safety, and Sustainable Development)	(514)	kids
(405)	harassment			(515)	kWh
(406)	harm	(457)	HSSE (Health, Safety, Security, and Environment)	(516)	KYC (Know Your Customer)
(407)	harmful			(517)	L6
(408)	harms	(458)	HSSEC (Health, Safety, Security, Environment, and Community)	(518)	labor
(409)	hazard			(519)	landfill
(410)	hazardous	(459)	HSSEQ (Health, Safety, Security, Environment, and Quality)	(520)	landscape
(411)	hazards			(521)	Latinx
(412)	HCAHPS (Hospital Consumer Assessment of Healthcare Providers and Systems)	(460)	HTA (Health Technology Assessment)	(522)	laundrying
(413)	HDSA (Historically Disadvantaged South Africans)	(461)	human	(523)	lawfully
(414)	HDSAs (Historically Disadvantaged South Africans)	(462)	human-resource	(524)	LDAR (Leak Detection and Repair)
(415)	health	(463)	human-resources	(525)	leader
(416)	Health-e Workforce Solutions	(464)	humanitarian	(526)	leaders
(417)	healthcare	(465)	humanity	(527)	leadership
(418)	healthcare-associated	(466)	hygiene	(528)	leakage
(419)	healthier	(467)	ICAM (Incident Cause Analysis Method)	(529)	leaks
(420)	healthy			(530)	LEED (Leadership in Energy and Environmental Design)
(421)	heat	(468)	IDEAL (Inclusion, Diversity, Equity, Access and Leadership)	(531)	legal
(422)	help			(532)	legislation
(423)	helped	(469)	IIR (Illness Incident Rate/Injury Incident Rate)	(533)	LFTR (Lost-Time Injury Frequency Rate)
(424)	helping			(534)	LGBTQ
(425)	HES (Health, Environment, and Safety)	(470)	illegal	(535)	life-changing
		(471)	illness	(536)	life-enhancing
		(472)	illnesses	(537)	LifeSkills
		(473)	impact	(538)	literacy
		(474)	impacted	(539)	litigations
		(475)	impacting	(540)	livelihood
		(476)	impacts	(541)	lives
				(542)	LMICs (Low- and Middle-Income Countries)
				(543)	local
				(544)	LOCIs (Loss-of-Containment Incidents)
				(545)	LOPC (Loss of Primary Containment)

(546)	lost	(609)	NABERS (National Australian Built Environment Rating System)	(671)	peatland
(547)	Lost-Time	(610)	nationality	(672)	people
(548)	low-carbon	(611)	native	(673)	people-based
(549)	low-emission	(612)	near-miss	(674)	peoples
(550)	LTAFR (Lost-Time Accident Frequency Ratio)	(613)	NECEC (New England Clean Energy Connect)	(675)	personnel development
(551)	LTAR (Lost-Time Accident Rate)	(614)	neighborhoods	(676)	PHC (Plant Health Committee)
(552)	LTAs (Lost-Time Accidents)	(615)	net-zero	(677)	PHEV (plug-in hybrid vehicle)
(553)	LTDF (Lost-Time and Disabling Injury Frequency)	(616)	ISNetworld	(678)	philanthropic
(554)	LTFIR (Lost-Time Injury Frequency Rate)	(617)	neutralize	(679)	philanthropy
(555)	LTI (Lost-Time Incidents/Long-Term Injuries)	(618)	newborn	(680)	phishing
(556)	LTIF (Lost-Time Injury Frequency)	(619)	NFDL (Non-Fatal Days Lost)	(681)	photovoltaic
(557)	LTIFR (Lost-Time Injury Frequency Rate)	(620)	nitrogen	(682)	physician
(558)	LTIFR (Lost-Time Injury Frequency Rate)	(621)	noise	(683)	planet
(559)	LTIR (Lost-Time Injury Rate)	(622)	noise-related	(684)	plant-based
(560)	LTIS (Lost-Time Injury Severity)	(623)	non-compliance	(685)	planting
(561)	LTIs (Lost-Time Injuries)	(624)	non-compliances	(686)	plastic
(562)	LTISR (Lost-Time Incident Severity Rate)	(625)	non-compliant	(687)	plastics
(563)	LWCR (Lost Workday Case Rate)	(626)	non-discrimination	(688)	PLMUS (Professional-Level Women, U.S.)
(564)	LWDIR (Lost Workday Case Incidence Rate)	(627)	non-emitting	(689)	PLWG (Professional-Level Women, Global)
(565)	LWDR (Lost Workday Rate)	(628)	non-fatal	(690)	PM10 (Particulate Matter 10)
(566)	MAIFI (Momentary Average Interruption Frequency Index)	(629)	non-fresh	(691)	PMVA (Preventable Motor Vehicle Accidents)
(567)	malaria	(630)	non-hazardous	(692)	PMVAR (Preventable Motor Vehicle Accident Rate)
(568)	males	(631)	non-injury	(693)	policies
(569)	managerial	(632)	non-renewable	(694)	policy
(570)	managers	(633)	non-reportable	(695)	polymaker
(571)	materiality	(634)	non-white	(696)	pollution
(572)	maternal	(635)	norms	(697)	pollutions
(573)	Mecheshoo	(636)	NPS (Net Promoter Score)	(698)	population
(574)	Medicaid	(637)	NQS (National Quality Standard)	(699)	populations
(575)	medical	(638)	nurture	(700)	positivity
(576)	medically	(639)	nurturing	(701)	potable
(577)	medicine	(640)	nutrition	(702)	poverty
(578)	medicines	(641)	occupational	(703)	POW (Program of Work)
(579)	men	(642)	ODMs (organizational diversity metrics)	(704)	prejudice
(580)	mental	(643)	odor	(705)	preventable
(581)	mentality	(644)	Ofcom	(706)	preventative
(582)	mentor	(645)	offset	(707)	prevention
(583)	mentoring	(646)	offsets	(708)	preventive
(584)	mentorship	(647)	offsetting	(709)	privacy
(585)	methane	(648)	Ofwat	(710)	products
(586)	microplastics	(649)	OHC (Organizational Health Check)	(711)	prosecution
(587)	middle-income	(650)	OHES (Occupational Health, Environmental, and Safety)	(712)	prosper
(588)	migrant	(651)	OHI (Organizational Health Index)	(713)	protect
(589)	minorities	(652)	OHSAS (Occupational Health and Safety Assessment Series)	(714)	protected
(590)	minority	(653)	OHSE (Occupational Health, Safety, and Environment)	(715)	protecting
(591)	mitigate	(654)	OII (Occupational Illnesses and Injuries)	(716)	protection
(592)	mitigating	(655)	OIIR (Occupational Illness and Injuries Rate)	(717)	PSER (Process Safety Event Rate)
(593)	mitigation	(656)	oil-to-gas	(718)	PSEs (Process Safety Events)
(594)	MMTCO2e	(657)	ombudsman	(719)	PSIR (Process Safety Incident Rate)
(595)	mobility	(658)	ORIR (Occupational Safety and Health Administration Recordable Incident Rate)	(720)	PSIs (Potentially Serious Incidents)
(596)	monitor	(659)	OSHA (Occupational Safety and Health Administration)	(721)	PSPS (Public Safety Power Shutoff)
(597)	morale	(660)	OSHA-recordable (Occupational Safety and Health Administration-recordable)	(722)	psychologically
(598)	morbidity	(661)	outpatient	(723)	PUE (Power Usage Effectiveness)
(599)	mortality	(662)	OWL (Online Wisdom of Linamar)	(724)	PV (photovoltaics)
(600)	MOSWEC (Mass-on-Spring Wave Energy Converter)	(663)	P1 (Priority 1)	(725)	PVAR (Preventable Vehicle Accident Rate)
(601)	motivated	(664)	palm	(726)	PVIR (Preventable Vehicle Incident Rate/Preventable Vehicle Injury Rate)
(602)	motivating	(665)	parental	(727)	QHSE (Quality, Health, Safety, and Environment)
(603)	MSCI	(666)	passion	(728)	QHSES (Quality, Health, Safety, Environment, and Security)
(604)	MSHA (Mine Safety and Health Administration)	(667)	patient	(729)	QualityScore
(605)	MTIFR (Medically Treated Injuries Frequency Rate)	(668)	patient-centric	(730)	race
(606)	multicultural	(669)	patient-focused	(731)	racial
(607)	multiracial	(670)	patients	(732)	racialized
(608)	MVI (Motor Vehicle Incident)			(733)	RCFR (Recordable Case Frequency Rate)
				(734)	RCR (Recordable Personal Injury Case Rate)
				(735)	recordable

(736)	recordables	(801)	RIR (Recordable Incident Rate/Reportable Incident Rate)	(856)	SIP (Sustainable Improvement Program)
(737)	recruit	(802)	Robeco	(857)	slates
(738)	recruiting	(803)	RobecoSAM	(858)	slavery
(739)	recyclability	(804)	rPET (recycled polyethylene terephthalate)	(859)	SLO (Social License to Operate)
(740)	recyclable	(805)	RSE (Responsabilité Sociétale des Entreprises)	(860)	smallholder
(741)	recycle	(806)	RVIR (Recordable Vehicular Incident Rate)	(861)	SMBs (Small and Micro Businesses)
(742)	recycled	(807)	SACIFR (Serious Actual Consequence Incidence Frequency Rate)	(862)	SMCR (Senior Managers and Certification Regime)
(743)	recycling	(808)	SAF (Sustainable Aviation Fuel)	(863)	SO2 (sulfur dioxide)
(744)	reduce	(809)	safe	(864)	social
(745)	reduction	(810)	safeguarding	(865)	social-economical
(746)	reductions	(811)	safely	(866)	social health
(747)	refuel	(812)	safer	(867)	socially
(748)	regeneratively	(813)	safety	(868)	societal
(749)	regime	(814)	safety-first	(869)	societies
(750)	regulation	(815)	safety-related	(870)	society
(751)	regulations	(816)	SAIDI (System Average Interruption Duration Index)	(871)	society's
(752)	regulator	(817)	SAIFI (System Average Interruption Frequency Index)	(872)	socioeconomic
(753)	regulators	(818)	salary	(873)	soil
(754)	regulatory	(819)	saltwater	(874)	solar
(755)	rehab	(820)	SAM (Sustainable Asset Management)	(875)	solidarity
(756)	rehabilitate	(821)	sanitation	(876)	SOX (Sarbanes-Oxley)
(757)	rehabilitated	(822)	Sapin	(877)	SOX deficiencies (Sarbanes-Oxley deficiencies)
(758)	rehabilitation	(823)	Sarbanes-Oxley	(878)	SOX-compliant (Sarbanes-Oxley-compliant)
(759)	rehospitalization	(824)	SASB (Sustainability Accounting Standards Board)	(879)	species
(760)	relations	(825)	satisfaction	(880)	spill
(761)	relationship	(826)	satisfactory	(881)	spilled
(762)	reliability	(827)	satisfied	(882)	spills
(763)	reliance	(828)	satisfy	(883)	SPMVI (Serious Preventable Motor Vehicle Incident)
(764)	remotely	(829)	SBTi (Science Based Targets initiative)	(884)	SSOFR (Significant Safety Occurrence Frequency Rate)
(765)	removals	(830)	SBTi-approval (Science Based Targets initiative-approval)	(885)	staff
(766)	renewable	(831)	SCFR (Serious Case Frequency Rate)	(886)	stakeholders
(767)	renewables	(832)	science-based	(887)	StakeholderWatch
(768)	replacements	(833)	scope	(888)	STARR (Safety, Teamwork, Accountability, Respect and Results)
(769)	represented	(834)	scopes	(889)	statutorily
(770)	resilience	(835)	SDG (Sustainable Development Goal)	(890)	stewardship
(771)	resilience-based	(836)	secrecy	(891)	stress
(772)	resiliency	(837)	security	(892)	succession
(773)	resilient	(838)	SEEC (Sustainable Energy and Environment Coalition)	(893)	suicide
(774)	reskilling	(839)	SEIFR (Significant Environmental Incident Frequency Rate)	(894)	supervisors
(775)	resource	(840)	self-care	(895)	supplied
(776)	resources	(841)	self-development	(896)	support
(777)	resources-related	(842)	serious	(897)	supported
(778)	respecting	(843)	severity	(898)	supporting
(779)	respects	(844)	sexual	(899)	supportive
(780)	responsibilities	(845)	SF6 (sulfur hexafluoride)	(900)	supports
(781)	responsibility	(846)	shared-value	(901)	surveillance
(782)	responsible	(847)	SHECR (Safety, Health, Environment, and Community Relations)	(902)	SustainAbilities
(783)	responsibly	(848)	SHECS (Safety, Health, Environment, and Sustainability)	(903)	sustainability
(784)	restoration	(849)	SHS (Safety, Health, and Sustainability)	(904)	sustainability-based
(785)	retention	(850)	sick	(905)	sustainability-labelled
(786)	retirees	(851)	sickness	(906)	sustainability-linked
(787)	retraining	(852)	SICR (Serious Injury Case Rate)	(907)	sustainability-related
(788)	reusable	(853)	SIF (Serious Incidents and Fatalities/Serious Injury and Fatality/Serious Injuries and Fatalities)	(908)	sustainable
(789)	reusables	(854)	SIFR (Serious Injury Frequency Rate/Significant Injury Frequency Rate)	(909)	sustainable-development
(790)	reuse	(855)	sinks	(910)	sustainably
(791)	reused			(911)	Sustainagility
(792)	RGMP (Responsible Gold Mining Principles)			(912)	Sustainalytics
(793)	Ribbon			(913)	SWD (saltwater disposal)
(794)	RICI (Road Injury Crash Index)			(914)	system average
(795)	RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations)			(915)	tailings
(796)	RIDDORs (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations)			(916)	tails
(797)	RIF (Reportable Incident Frequency/Reportable Injury Frequency)			(917)	talent
(798)	RIFR (Recordable Injury Frequency Rate/Reportable Injury Frequency Rate)			(918)	talents
(799)	rights			(919)	TAR (Total Accident Rate)
(800)	RightShip			(920)	taxonomy
				(921)	TCEQ (Texas Commission on Environmental Quality)
				(922)	TCF (Treating Customers Fairly)

Operating Keywords

(1) A&D activities
(2) access
(3) ACQ
(4) acquire
(5) acquisition
(6) AER
(7) AISC
(8) allocation of assets
(9) allocation of capital
(10) annual spend
(11) ARIS
(12) asset base
(13) asset growth
(14) asset quality
(15) asset turns
(16) ATWC
(17) AWC
(18) balance sheet
(19) borrowings
(20) C&E
(21) CapEx
(22) capital
(23) capital adequacy
(24) capital allocation
(25) capital and exploratory
(26) capital deployment
(27) capital expenditure
(28) capital expense
(29) capital growth
(30) capital level
(31) capital position
(32) capital program
(33) capital project
(34) capital ratio
(35) capital recycling
(36) capital spend
(37) capital structure
(38) capital turnover
(39) cash conversion cycle
(40) cash cycle
(41) CASM
(42) CET1
(43) charge-off
(44) CIR
(45) classified
(46) combined ratio
(47) combined trade ratio
(48) common equity
(49) corporate expenditure
(50) cost
(51) credit loss
(52) credit provision
(53) credit quality
(54) criticized asset
(55) criticized loans
(56) days of inventory
(57) days sales
(58) DBAR
(59) debt
(60) default
(61) delinquency
(62) development cost
(63) DIO
(64) DSO
(65) DUAR

(66) DWC
(67) efficiencies
(68) efficiency
(69) equity
(70) equity ratio
(71) equity/assets
(72) expand asset base
(73) expenditure
(74) expense
(75) F&D
(76) FD&A
(77) fee
(78) financial flexibility
(79) financial position
(80) financial resources
(81) financial stability
(82) financial strength
(83) financing
(84) finding and development
(85) finding cost
(86) finding development
(87) funding
(88) G&A
(89) gearing
(90) general and administrative
(91) GMV
(92) gross asset base
(93) grow asset base
(94) growth in assets
(95) growth in core assets
(96) growth in unencumbered asset pool
(97) growth of assets
(98) growth rate in assets
(99) GWP
(100) impairment
(101) increase asset base
(102) inorganic
(103) internal capital generation
(104) inventories
(105) inventory
(106) invested capital
(107) investment
(108) leverage
(109) liability
(110) loan loss
(111) loan quality
(112) loan to value
(113) LOE
(114) loss ratio
(115) LTV
(116) M&A
(117) management fee growth
(118) megawatts
(119) merchandise volume
(120) modernize asset base
(121) NCO
(122) new assets growth
(123) NIW
(124) non-accrual
(125) non-acquired growth
(126) non-performing
(127) NPA
(128) NPE
(129) NPL
(130) NSFR
(131) NWC

(132) O&M
(133) operating
(134) operating leverage
(135) operating ratio
(136) operational effectiveness
(137) OpEx
(138) optimize our current asset base
(139) organic growth
(140) overhead
(141) OWC
(142) policyholder's surplus
(143) premium
(144) project finance
(145) provision expense
(146) provision for
(147) provision of
(148) provision rate
(149) PWCPS
(150) R&D
(151) raise
(152) raising
(153) ratio
(154) receivable
(155) research
(156) research and development
(157) revenue
(158) risk-based
(159) risk-weighted
(160) RWA
(161) sales
(162) saving
(163) shareholder's equity
(164) solvency
(165) spend
(166) stock cover
(167) stockholder's equity
(168) surplus growth
(169) Texas ratio
(170) tier
(171) total asset
(172) total capital
(173) turnover
(174) WCRR
(175) WCT
(176) working capital
(177) written
(178) written premium

Market Keywords

(1) index outperformance
(2) market cap
(3) market performance
(4) market value
(5) market-related
(6) price to
(7) securityholder return
(8) share price
(9) share valuation
(10) shareholder return
(11) stock performance
(12) stock price
(13) stockholder return
(14) TSR

Figure 1. Pay metrics and other metric types

This figure plots the proportion of firms that report different types of compensation metrics, both globally and across regions. Compensation data are obtained from Executive Compensation Analytics (ECA) provided by Institutional Shareholder Services (ISS). The international sample includes firms from 34 countries from 2011 to 2021.

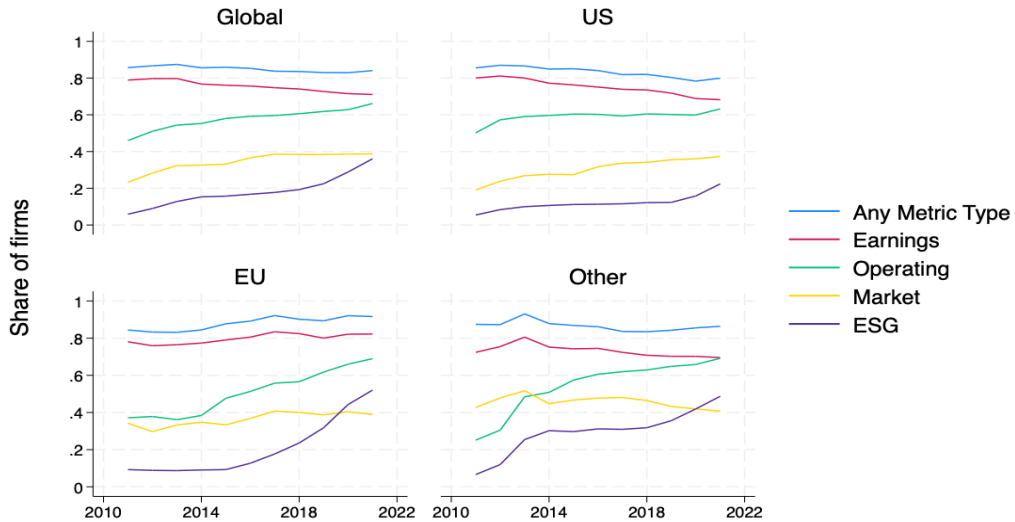


Figure 2. ESG metrics materiality

This figure plots the share of firms with ESG metrics over time, distinguishing between firms with and without material ESG metrics. Compensation data are obtained from Executive Compensation Analytics (ECA) provided by Institutional Shareholder Services (ISS). The international sample includes firms from 34 countries from 2011 to 2021.

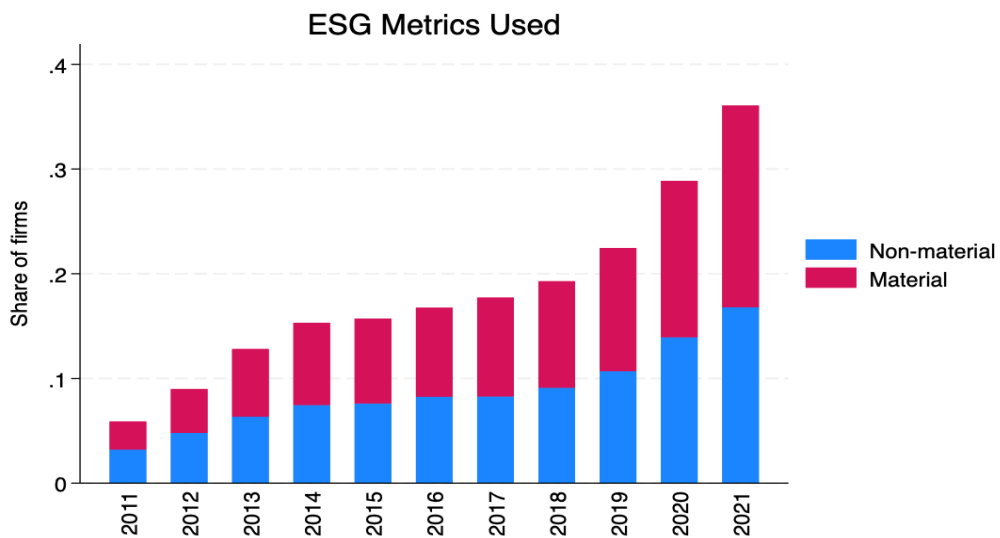


Figure 3. Types of ESG metrics

This figure plots the share of sample firms using different types of ESG metrics. Panel A considers the broad SASB categories, while Panel B focuses on the specific categories. Compensation data are obtained from Executive Compensation Analytics (ECA) provided by Institutional Shareholder Services (ISS). The international sample includes firms from 34 countries from 2011 to 2021.

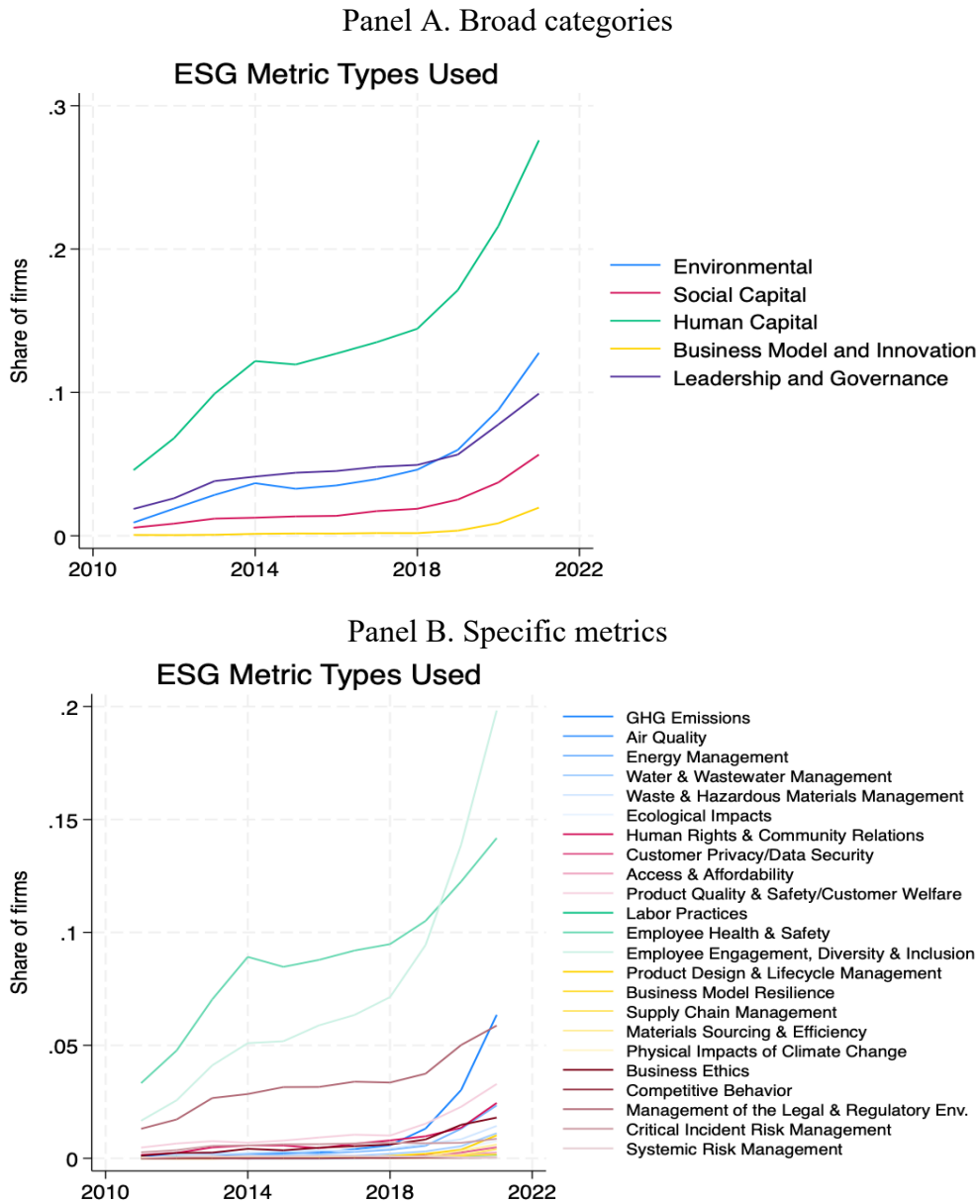


Figure 4. Operating metrics

This figure plots the share of sample firms using different types of operating metrics. Compensation data are obtained from Executive Compensation Analytics (ECA) provided by Institutional Shareholder Services (ISS). The international sample includes firms from 34 countries from 2011 to 2021.

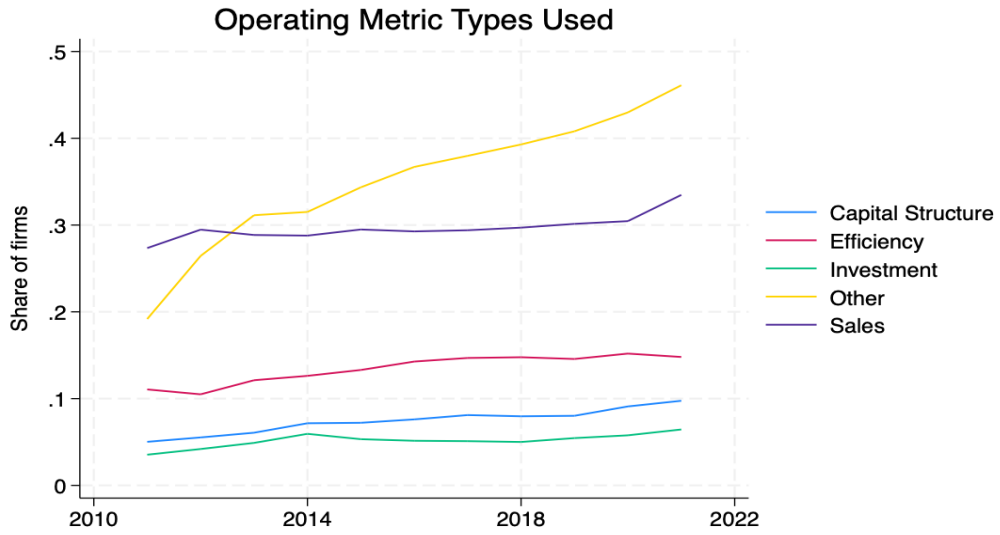


Table 1. Summary statistics

The table presents summary statistics across three groups of variables, with compensation variables in Panel A, ESG news in Panel B, and other variables in Panel C. The sample covers the period from 2011 to 2021. All variables are defined in Appendix A.

	N	Mean	St. Dev.	10%	Median	90%
<i>Panel A. Compensation Variables</i>						
ESG Metric	44,348	0.22	0.414	0	0	1
Material ESG Metric	43,766	0.122	0.328	0	0	1
First ESG Metric (firm-year-metric level)	1,099,677	0.006	0.079	0	0	0
Operating Metric	44,348	0.627	0.484	0	1	1
Earnings Metric	44,348	0.804	0.397	0	1	1
Market Metric	44,348	0.392	0.488	0	0	1
Num Metric Types	44,348	2.043	1.143	0	2	4
Num Metric Types Excl. Mkt	44,348	1.651	0.899	0	2	3
Num Individ. Metrics	44,348	2.739	1.937	0	3	5
Num ESG Metrics	44,348	0.332	0.85	0	0	1
Num Operating Metrics	44,348	1.004	0.995	0	1	2
Num Earnings Metrics	44,348	1.012	0.635	0	1	2
Equity Comp	42,488	0.764	0.425	0	1	1
Share of Equity Comp	42,488	0.375	0.292	0	0.394	0.751
Cashflow Metric	44,348	0.246	0.431	0	0	1
Profitability Metric	44,348	0.766	0.424	0	1	1
Sales Metric	44,348	0.329	0.47	0	0	1
Efficiency Metric	44,348	0.152	0.359	0	0	1
Investment Metric	44,348	0.054	0.226	0	0	0
Capital Structure Metric	44,348	0.081	0.273	0	0	0
Total Comp	42,351	14.92	1.232	13.48	14.97	16.36
Stock + Options + Bonus	38,238	14.26	1.464	12.37	14.43	15.96
Stock + Options	32,442	14.29	1.475	12.31	14.48	15.98
<i>Panel B. ESG News Variables</i>						
St. Dev. All Pulse News	44,343	10.02	7.782	0	9.612	20.37
Metric-specific Pulse News (firm-year-metric level)	447,452	60.48	21.34	32.77	59.1	90.36
All Categories Pulse News	44,348	71.20	18.74	47.83	74.36	92.93
Material Pulse News	40,896	69.67	20.32	43.77	73.21	93.43
Metric News	44,348	17.23	53.27	0	0	72.42
Below Avg ESG Rank	44,348	0.205	0.404	0	0	1
Below Avg Material ESG Rank	44,348	0.176	0.381	0	0	1
<i>Panel C. Other Variables</i>						
3-yr return	40,779	9.984	34.85	-20.22	9.56	36.98
Log(Var Daily Returns)	40,986	-7.529	1.158	-8.788	-7.656	-6.188
St. Dev. Ind-adj. ROE	43,918	0.299	0.575	0.029	0.092	0.739
Log Mkt Cap	44,034	21.25	1.901	18.83	21.26	23.72
Inst Block Own	41,518	0.174	0.171	0	0.133	0.418
Large Non-Inst Block	43,065	0.345	0.475	0	0	1
New 1% Block	41,518	0.547	0.498	0	1	1
New 5% Block	41,518	0.19	0.392	0	0	1

New 1% Active Block	41,518	0.22	0.414	0	0	1
New 5% Active Block	41,518	0.051	0.22	0	0	0
CEO Tenure	35,910	8.242	7.411	1	6	18
Mean Say-on-Pay Approval	32,140	0.909	0.123	0.758	0.955	0.991
Avg. Vote Against Mgmt	40,167	0.057	0.067	0.011	0.036	0.124
ESG Proposal	44,348	0.128	0.335	0	0	1
Num Shareholder Prop	40,170	0.175	0.769	0	0	0
Num Shareholder Prop (Mgmt. Rec Against)	40,170	0.136	0.621	0	0	0
Ind-adj. CF/Assets	43,977	0.312	0.299	-0.004	0.315	0.651
St. Dev. Ind-adj. CF/Assets	43,906	0.076	0.160	0.011	0.041	0.132
Ind-adj Profitability	43,480	0.260	0.291	-0.004	0.270	0.595
St. Dev. Ind-adj Profitability	43,326	0.076	0.160	0.010	0.042	0.130
Ind-adj Sales/Assets	43,984	0.104	0.623	-0.503	-0.016	0.873
St. Dev. Ind-adj Sales/Assets	43,920	0.122	0.147	0.014	0.080	0.269
Ind-adj. COGS/Sales	37,677	-11.610	53.110	-54.970	-4.967	24.340
St. Dev. Ind-adj. COGS/Sales	37,328	8.349	24.350	1.350	3.554	15.140
Ind-adj. PPE/Assets	43,394	0.012	0.237	-0.215	-0.018	0.376
St. Dev. Ind-adj. PPE/Assets	43,213	0.036	0.044	0.004	0.022	0.079
Ind-adj. Book Leverage	41,576	-5.936	22.040	-33.980	-6.287	18.620
St. Dev. Ind-adj. Book Leverage	39,210	3.996	6.262	0.788	2.519	7.839

Table 2. ESG and other compensation metrics

This table presents firm-level analysis of ESG and other compensation metrics. Panel A reports regressions of an indicator for the presence of an *ESG Metric* (*Material ESG Metric*) on contemporaneous indicators for operating, earnings, and market metrics. Panel B presents regressions of the number of broad metric types (ESG, operating, earnings, and market) and the number of individual ESG and other metrics on an indicator for equity-linked compensation and the share of equity-linked compensation to total executive pay. Panel C reports regressions of the number of individual ESG, operating, and earning metrics or dummies for the presence of such metrics as a function of equity-linked compensation. All regressions include the lagged standard deviation of ESG-related firm news, an indicator for whether the firm's ESG rank is below the industry average, and other firm-level controls described in Appendix A. All models include year, industry, and country fixed effects. The t-statistics, calculated with standard errors clustered at the firm level, are reported in parentheses. Statistical significance at the 10%, 5%, and 1% level is denoted by *, **, and ***, respectively.

Panel A. ESG and material ESG metrics				
	(1)	(2)	(3)	(4)
	ESG Metric		Material ESG Metric	
Operating metric	0.1507*** (22.22)	0.1460*** (18.36)	0.0810*** (14.88)	0.0794*** (12.53)
Earnings metric	0.0534*** (6.68)	0.0295*** (2.91)	0.0364*** (5.49)	0.0250*** (2.94)
Market metric	0.0742*** (10.35)	0.0602*** (7.38)	0.0452*** (7.83)	0.0336*** (5.05)
St. Dev. All Pulse News		0.0003 (0.91)		0.0003 (1.16)
Log(Var Daily Returns)		0.0171*** (4.66)		0.0148*** (4.96)
St. Dev. Ind-adj. ROE		0.0093 (1.40)		-0.0048 (-1.04)
Log Mkt Cap		0.0203*** (8.23)		0.0097*** (4.91)
Inst Block Own		-0.0259 (-1.16)		-0.0194 (-1.07)
Large Non-Inst Block		-0.0211** (-2.51)		-0.0190*** (-2.63)
Below Avg ESG Rank		0.0001 (0.02)		
Below Avg Material ESG Rank				0.0144** (2.26)
Observations	41,516	31,760	40,982	31,490
Year FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Country FE	YES	YES	YES	YES
Adjusted R2	0.283	0.302	0.266	0.288

Panel B. Number of metrics and equity compensation

	(1)	(2)	(3)	(4)	(5)	(6)
	Num Metric Types		Num Metric Types Excl. Mkt		Num Indiv. Metrics Excl. Mkt	
Equity Comp	0.2914*** (10.02)		0.1834*** (7.54)		0.3575*** (8.36)	
Share of Equity Comp		0.4473*** (9.76)		0.1873*** (5.10)		0.3158*** (4.75)
St. Dev. All Pulse News	0.0038*** (3.95)	0.0037*** (3.83)	0.0035*** (4.46)	0.0035*** (4.49)	0.0043*** (2.90)	0.0044*** (2.97)
Log(Var Daily Returns)	-0.0354*** (-3.22)	-0.0474*** (-4.27)	-0.0372*** (-4.19)	-0.0427*** (-4.77)	-0.0358** (-2.12)	-0.0455*** (-2.66)
St. Dev. Ind-adj. ROE	-0.0351* (-1.87)	-0.0423** (-2.24)	-0.0405** (-2.49)	-0.0432*** (-2.65)	-0.0036 (-0.13)	-0.0078 (-0.28)
Log Mkt Cap	0.1499*** (19.17)	0.1312*** (15.74)	0.0955*** (15.15)	0.0892*** (13.22)	0.1896*** (15.63)	0.1801*** (14.00)
Inst Block Own	0.3249*** (4.67)	0.2622*** (3.76)	0.1868*** (3.26)	0.1651*** (2.87)	0.1147 (1.08)	0.0818 (0.77)
Large Non-Inst Block	-0.2843*** (-11.17)	-0.2925*** (-11.50)	-0.1725*** (-8.23)	-0.1811*** (-8.60)	-0.3085*** (-7.89)	-0.3273*** (-8.30)
Below Avg ESG Rank	-0.0192 (-0.95)	-0.0198 (-0.99)	-0.0210 (-1.33)	-0.0223 (-1.41)	-0.0352 (-1.08)	-0.0384 (-1.18)
Observations	30,841	30,841	30,841	30,841	30,841	30,841
Year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Adjusted R2	0.266	0.267	0.194	0.192	0.220	0.216

Panel C. Metrics and equity compensation

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Number of Individual Metrics</i>			<i>Dummies for Individual Metrics</i>		
	Num ESG Metrics	Num Operating Metrics	Num Earnings Metrics	ESG metric	Operating metric	Earnings metric
Equity Comp	0.0599*** (3.24)	0.1656*** (6.45)	0.1321*** (8.08)	0.0233*** (2.73)	0.0813*** (6.03)	0.0788*** (6.76)
St. Dev. All Pulse News	-0.0005 (-0.74)	0.0032*** (3.22)	0.0016*** (2.90)	0.0006* (1.82)	0.0014*** (3.02)	0.0015*** (4.45)
Log(Var Daily Returns)	0.0194*** (2.74)	0.0096 (0.92)	-0.0649*** (-9.73)	0.0163*** (4.21)	-0.0002 (-0.04)	-0.0534*** (-13.19)
St. Dev. Ind-adj. ROE	0.0007 (0.06)	0.0130 (0.70)	-0.0172 (-1.41)	0.0091 (1.32)	0.0022 (0.25)	-0.0518*** (-7.26)
Log Mkt Cap	0.0614*** (11.99)	0.0569*** (7.45)	0.0713*** (15.57)	0.0298*** (11.76)	0.0376*** (10.42)	0.0281*** (10.17)
Inst Block Own	-0.0251 (-0.66)	0.0035 (0.05)	0.1363*** (3.32)	-0.0045 (-0.19)	0.0809** (2.40)	0.1104*** (4.35)
Large Non-Inst Block	-0.0500*** (-3.02)	-0.1533*** (-5.96)	-0.1052*** (-7.20)	-0.0410*** (-4.71)	-0.0776*** (-6.25)	-0.0539*** (-5.82)
Below Avg ESG Rank	-0.0009 (-0.06)	-0.0177 (-0.87)	-0.0167 (-1.40)	-0.0045 (-0.62)	-0.0103 (-1.09)	-0.0062 (-0.95)
Observations	30,841	30,841	30,841	30,841	30,841	30,841
Year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Adjusted R2	0.250	0.106	0.222	0.266	0.0884	0.224

Table 3. ESG metrics and active block ownership

This table presents the analysis of ESG and material ESG compensation metrics as a function of firm characteristics. All firm-level controls (except *CEO Tenure*) are lagged and *described* in Appendix A. All models include year, industry, and country fixed effects. The t-statistics, calculated with standard errors clustered at the firm level, are reported in parentheses. Statistical significance at the 10%, 5%, and 1% level is denoted by *, **, and ***, respectively.

Panel A. ESG metrics				
	(1)	(2)	(3)	(4)
	ESG Metric			
Log(Var Daily Returns)	0.0168*** (4.21)	0.0159*** (4.01)	0.0168*** (4.21)	0.0166*** (4.17)
New 1% Block	0.0012 (0.22)			
New 1% Active Block		0.0203*** (3.29)		
New 5% Block			0.0010 (0.16)	
New 5% Active Block				0.0198* (1.79)
St. Dev. All Pulse News	0.0008** (2.25)	0.0008** (2.23)	0.0008** (2.26)	0.0008** (2.26)
St. Dev. Ind-adj. ROE	0.0057 (0.79)	0.0045 (0.63)	0.0056 (0.79)	0.0051 (0.72)
Below Avg ESG Rank	-0.0081 (-1.09)	-0.0087 (-1.18)	-0.0081 (-1.09)	-0.0082 (-1.10)
Log Mkt Cap	0.0278*** (10.77)	0.0282*** (10.87)	0.0277*** (10.72)	0.0279*** (10.76)
Inst Block Own	0.0063 (0.27)	0.0017 (0.07)	0.0062 (0.25)	0.0025 (0.10)
Large Non-Inst Block	-0.0467*** (-5.19)	-0.0469*** (-5.21)	-0.0468*** (-5.20)	-0.0473*** (-5.25)
CEO Tenure	-0.0016*** (-3.44)	-0.0016*** (-3.33)	-0.0016*** (-3.44)	-0.0016*** (-3.39)
Observations	26,731	26,731	26,731	26,731
Year FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Country FE	YES	YES	YES	YES
Adjusted R2	0.274	0.275	0.274	0.274

Panel B. Material ESG metrics

	(1)	(2)	(3)	(4)
	Material ESG Metric			
Log(Var Daily Returns)	0.0158*** (5.01)	0.0153*** (4.87)	0.0159*** (5.03)	0.0157*** (4.98)
New 1% Block	0.0052 (1.21)			
New 1% Active Block		0.0128*** (2.75)		
New 5% Block			0.0026 (0.56)	
New 5% Active Block				0.0179** (2.07)
St. Dev. All Pulse News	0.0004 (1.42)	0.0004 (1.43)	0.0004 (1.46)	0.0004 (1.46)
St. Dev. Ind-adj. ROE	-0.0084* (-1.78)	-0.0090* (-1.91)	-0.0084* (-1.77)	-0.0088* (-1.87)
Below Avg ESG Rank	0.0129* (1.93)	0.0126* (1.88)	0.0129* (1.92)	0.0129* (1.92)
Log Mkt Cap	0.0143*** (6.97)	0.0145*** (6.99)	0.0142*** (6.88)	0.0143*** (6.94)
Inst Block Own	-0.0012 (-0.07)	-0.0017 (-0.09)	-0.0004 (-0.02)	-0.0025 (-0.13)
Large Non-Inst Block	-0.0379*** (-5.10)	-0.0382*** (-5.14)	-0.0382*** (-5.13)	-0.0386*** (-5.18)
CEO Tenure	-0.0011*** (-2.89)	-0.0011*** (-2.83)	-0.0011*** (-2.91)	-0.0011*** (-2.86)
Observations	26,493	26,493	26,493	26,493
Year FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Country FE	YES	YES	YES	YES
Adjusted R2	0.291	0.291	0.291	0.291

Table 4. ESG compensation metrics – metric-level analysis

This table presents metric-level analysis of ESG compensation metrics. Panel A reports regressions of an indicator for the presence of an *ESG Metric* on contemporaneous indicators for whether the metric is material and whether the firm ranks below average based on its ESG-related (material) news. Panel B studies the first introduction of individual ESG metrics in the CEO's compensation contract. Panel C examines improvements in a firm's ESG performance in the year after the introduction of a specific ESG metric. All regressions include lagged controls for institutional and non-institutional ownership as well as indicators for a new 1% (active) ownership block, where active institutional owners are defined as hedge funds, private equity, and venture capital. Detailed variable definitions are provided in Appendix A. All models include firm and year fixed effects. The t-statistics, calculated with standard errors clustered at the firm level, are reported in parentheses. Statistical significance at the 10%, 5%, and 1% level is denoted by *, **, and ***, respectively.

Panel A. ESG metrics				
	(1)	(2)	(3)	(4)
	ESG Metric			
Material ESG Metric	0.0152*** (19.05)	0.0152*** (19.05)	0.0148*** (19.06)	0.0148*** (19.06)
Below Avg ESG Rank	-0.0010* (-1.76)	-0.0010* (-1.79)		
Material Metric X Below Avg ESG Rank	0.0034** (2.36)	0.0034** (2.36)		
Below Avg Material ESG Rank			-0.0017*** (-2.69)	-0.0017*** (-2.70)
Material Metric X Below Avg Material ESG Rank			0.0064*** (4.00)	0.0064*** (4.00)
New 1% Block	0.0009** (2.39)		0.0009** (2.39)	
New 1% Active Block		0.0016*** (4.15)		0.0016*** (4.13)
Inst Block Own	-0.0017 (-1.03)	-0.0015 (-0.92)	-0.0017 (-1.02)	-0.0015 (-0.91)
Large Non-Inst Block	0.0011 (1.26)	0.0011 (1.20)	0.0011 (1.27)	0.0011 (1.21)
Observations	818,904	818,904	818,904	818,904
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Adjusted R2	0.0541	0.0541	0.0541	0.0541

Panel B. Introducing ESG metrics

	(1)	(2)	(3)	(4)	(5)	(6)
	First ESG Metric			First Material ESG Metric		
Metric-Specific News	0.0002*** (19.64)	0.0002*** (17.48)	0.0002*** (17.51)	0.0001*** (13.99)	0.0001*** (13.49)	0.0001*** (13.86)
Bad Metric-Specific News			-0.0000*** (-3.08)			-0.0000*** (-5.92)
Below Avg ESG Rank	0.0003 (0.40)	-0.0002 (-0.21)	0.0002 (0.32)			
Metric-Specific News X Below Avg ESG Rank		0.0000 (0.40)				
Below Avg Material ESG Rank				0.0005 (1.23)	0.0015* (1.80)	0.0008* (1.76)
Metric-Specific News X Below Avg Material ESG Rank					-0.0000 (-1.13)	
All Categories Pulse News	-0.0000*** (-2.74)	-0.0000*** (-2.74)	-0.0000*** (-2.68)			
Bad All Categories Pulse News			0.0000 (0.04)			
Material Pulse News				0.0000 (0.07)	0.0000 (0.06)	-0.0000 (-0.42)
Bad Material Pulse News						0.0000** (2.57)
New 1% Active Block	0.0007 (1.17)	0.0007 (1.17)	0.0007 (1.16)	0.0004 (1.04)	0.0004 (1.04)	0.0004 (0.99)
Inst Block Own	-0.0012 (-0.55)	-0.0012 (-0.55)	-0.0012 (-0.55)	-0.0014 (-1.02)	-0.0014 (-1.02)	-0.0013 (-0.94)
Large Non-Inst Block	0.0016 (1.28)	0.0016 (1.28)	0.0016 (1.27)	0.0002 (0.30)	0.0002 (0.30)	0.0002 (0.31)
Observations	341,621	341,621	341,621	342,980	342,980	342,980
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Adjusted R2	0.0247	0.0247	0.0247	0.0179	0.0179	0.0180

Panel C. ESG improvement after introducing ESG metrics

	(1)	(2)	(3)	(4)	(5)	(6)
	Metric-specific News (t+1)					
First ESG Metric	2.3725*** (7.50)	2.0561*** (5.92)	5.4406*** (3.34)			
First Material ESG Metric				2.3302*** (4.83)	1.6810*** (3.19)	6.5533*** (2.72)
Metric-Specific News	0.6581*** (210.29)	0.6581*** (210.31)	0.6583*** (209.90)	0.6578*** (209.29)	0.6578*** (209.29)	0.6580*** (209.09)
Metric-Specific News (t-1)	0.1088*** (42.09)	0.1088*** (42.09)	0.1089*** (41.95)	0.1083*** (41.65)	0.1083*** (41.64)	0.1083*** (41.54)
First ESG Metric X Metric-Specific News			-0.0303 (-1.12)			
First ESG Metric X Metric-Specific News (t-1)			-0.0181 (-0.72)			
First Material ESG Metric X Metric-Specific News						-0.0695 (-1.63)
First Material ESG Metric X Metric-Specific News (t-1)						-0.0001 (-0.00)
All Categories Pulse News	-0.0051** (-1.97)	-0.0051** (-1.97)	-0.0051** (-1.96)			
Material Pulse News				-0.0166*** (-6.58)	-0.0166*** (-6.57)	-0.0166*** (-6.55)
Below Avg ESG Rank	-0.5581*** (-5.72)	-0.5670*** (-5.80)	-0.5656*** (-5.79)			
First ESG Metric X Below Avg ESG Rank		1.3083* (1.65)	1.1315 (1.44)			
Below Avg Material ESG Rank				-0.4280*** (-4.39)	-0.4368*** (-4.48)	-0.4360*** (-4.47)
First Material ESG Metric X Below Avg Material ESG Rank					2.7475** (2.30)	2.4789** (2.11)
Inst Block Own	0.2389 (0.59)	0.2362 (0.58)	0.2375 (0.59)	0.3724 (0.90)	0.3723 (0.90)	0.3743 (0.90)
Large Non-Inst Block	0.2785* (1.69)	0.2789* (1.69)	0.2785* (1.69)	0.2847* (1.67)	0.2845* (1.67)	0.2838* (1.67)
Observations	289,117	289,117	289,117	285,854	285,854	285,854
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Adjusted R2	0.577	0.577	0.577	0.574	0.574	0.574

Table 5. Operating, earnings, and market metrics

This table presents firm-level analysis of operating (Panel A), earnings (Panel B), and market (Panel C) compensation metrics. *St. Dev. All Pulse News* is the lagged standard deviation over a firm's fiscal year of the daily TruValue Pulse Score that aggregates ESG-related news across SASB categories. All other firm-level controls (except *CEO Tenure*) are lagged and described in Appendix A. All models include year, industry, and country fixed effects. The t-statistics, calculated with standard errors clustered at the firm level, are reported in parentheses. Statistical significance at the 10%, 5%, and 1% level is denoted by *, **, and ***, respectively.

Panel A. Operating metrics

	(1)	(2)	(3)	(4)
	Operating Metric			
St. Dev. All Pulse News	0.0018*** (3.59)	0.0018*** (3.64)	0.0018*** (3.66)	0.0018*** (3.65)
Log(Var Daily Returns)	-0.0033 (-0.63)	-0.0039 (-0.74)	-0.0029 (-0.55)	-0.0028 (-0.52)
St. Dev. Ind-adj. ROE	-0.0041 (-0.44)	-0.0049 (-0.53)	-0.0038 (-0.41)	-0.0035 (-0.37)
New 1% Block	0.0226*** (3.06)			
New 1% Active Block		0.0223*** (2.58)		
New 5% Block			0.0036 (0.46)	
New 5% Active Block				-0.0066 (-0.45)
Log Mkt Cap	0.0390*** (10.07)	0.0389*** (10.01)	0.0383*** (9.90)	0.0383*** (9.86)
Inst Block Own	0.0813** (2.34)	0.0875** (2.52)	0.0906** (2.51)	0.0946*** (2.69)
Large Non-Inst Block	-0.0876*** (-6.48)	-0.0887*** (-6.57)	-0.0887*** (-6.57)	-0.0884*** (-6.54)
Below Avg ESG Rank	-0.0165 (-1.64)	-0.0172* (-1.71)	-0.0164 (-1.63)	-0.0164 (-1.63)
CEO Tenure	-0.0026*** (-3.31)	-0.0026*** (-3.29)	-0.0026*** (-3.36)	-0.0027*** (-3.38)
Observations	26,731	26,731	26,731	26,731
Year FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Country FE	YES	YES	YES	YES
Adjusted R2	0.0815	0.0814	0.0811	0.0811

Panel B. Earnings metrics

	(1)	(2)	(3)	(4)
	Earnings Metric			
St. Dev. All Pulse News	0.0018*** (4.90)	0.0018*** (4.96)	0.0018*** (4.92)	0.0018*** (4.93)
Log(Var Daily Returns)	-0.0549*** (-12.40)	-0.0536*** (-12.18)	-0.0544*** (-12.32)	-0.0541*** (-12.25)
St. Dev. Ind-adj. ROE	-0.0565*** (-7.47)	-0.0549*** (-7.24)	-0.0557*** (-7.37)	-0.0549*** (-7.25)
New 1% Block	0.0119** (2.18)			
New 1% Active Block		-0.0227*** (-3.35)		
New 5% Block			-0.0127** (-2.17)	
New 5% Active Block				-0.0499*** (-4.15)
Log Mkt Cap	0.0303*** (10.18)	0.0294*** (9.89)	0.0299*** (10.11)	0.0295*** (9.96)
Inst Block Own	0.1101*** (4.18)	0.1221*** (4.63)	0.1255*** (4.63)	0.1274*** (4.77)
Large Non-Inst Block	-0.0598*** (-5.80)	-0.0602*** (-5.84)	-0.0599*** (-5.80)	-0.0590*** (-5.71)
Below Avg ESG Rank	-0.0058 (-0.85)	-0.0051 (-0.74)	-0.0058 (-0.85)	-0.0056 (-0.82)
CEO Tenure	-0.0025*** (-4.14)	-0.0026*** (-4.28)	-0.0026*** (-4.22)	-0.0026*** (-4.29)
Observations	26,731	26,731	26,731	26,731
Year FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Country FE	YES	YES	YES	YES
Adjusted R2	0.229	0.230	0.229	0.230

Panel C. Market metrics

	(1)	(2)	(3)	(4)
	Market Metric			
St. Dev. All Pulse News	0.0006 (1.16)	0.0006 (1.18)	0.0006 (1.17)	0.0006 (1.18)
Log(Var Daily Returns)	-0.0003 (-0.07)	0.0000 (0.00)	0.0003 (0.06)	0.0002 (0.04)
St. Dev. Ind-adj. ROE	0.0003 (0.04)	0.0007 (0.08)	0.0015 (0.17)	0.0013 (0.15)
New 1% Block	0.0076 (1.08)			
New 1% Active Block		-0.0038 (-0.46)		
New 5% Block			-0.0281*** (-3.72)	
New 5% Active Block				-0.0311** (-2.44)
Log Mkt Cap	0.0588*** (16.32)	0.0585*** (16.13)	0.0586*** (16.17)	0.0583*** (16.06)
Inst Block Own	0.1425*** (4.36)	0.1474*** (4.51)	0.1668*** (4.90)	0.1534*** (4.63)
Large Non-Inst Block	-0.1086*** (-8.88)	-0.1089*** (-8.90)	-0.1079*** (-8.82)	-0.1081*** (-8.83)
Below Avg ESG Rank	-0.0025 (-0.24)	-0.0023 (-0.23)	-0.0025 (-0.25)	-0.0023 (-0.23)
CEO Tenure	-0.0054*** (-7.71)	-0.0055*** (-7.74)	-0.0055*** (-7.82)	-0.0055*** (-7.80)
Observations	26,731	26,731	26,731	26,731
Year FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Country FE	YES	YES	YES	YES
Adjusted R2	0.173	0.173	0.173	0.173

Table 6. Operating and earnings metrics

This table presents firm-level analysis of operating and earnings compensation metrics – cashflow, profitability, and sales metrics in Panel A, and efficiency, investment, and capital structure metrics in Panel B. All regressions include lagged firm-level controls defined in Appendix A. All models include year, industry, and country fixed effects. The t-statistics, calculated with standard errors clustered at the firm level, are reported in parentheses. Statistical significance at the 10%, 5%, and 1% level is denoted by *, **, and ***, respectively.

Panel A. Cashflow, profitability, and sales metrics						
	(1)	(2)	(3)	(4)	(5)	(6)
	Cashflow Metric		Profitability Metric		Sales Metric	
Ind-adj. CF/Assets	-0.0760*** (-3.09)	-0.0758*** (-3.09)				
SD Ind-adj. CF/Assets	-0.0649*** (-2.81)	-0.0661*** (-2.86)				
Ind-adj Profitability			0.2022*** (7.93)	0.2030*** (8.00)		
St. Dev. Ind-adj Profitability			-0.2864*** (-10.86)	-0.2835*** (-10.77)		
Ind-adj Sales/Assets					-0.0190* (-1.75)	-0.0197* (-1.81)
St. Dev. Ind-adj Sales/Assets					0.0660** (1.96)	0.0695** (2.07)
New 1% Block	0.0032 (0.51)		0.0092* (1.76)		0.0162** (2.50)	
New 1% Active Block		0.0117 (1.57)		-0.0174*** (-2.61)		0.0002 (0.02)
Log(Var Daily Returns)	-0.0067 (-1.49)	-0.0071 (-1.59)	-0.0490*** (-12.06)	-0.0481*** (-11.89)	-0.0194*** (-4.27)	-0.0192*** (-4.27)
St. Dev. Ind-adj. ROE	0.0450*** (4.88)	0.0445*** (4.82)	-0.0336*** (-4.79)	-0.0326*** (-4.62)	-0.0176* (-1.76)	-0.0173* (-1.74)
Log Mkt Cap	0.0491*** (15.23)	0.0493*** (15.19)	0.0223*** (7.70)	0.0217*** (7.49)	0.0327*** (9.49)	0.0321*** (9.29)
Inst Block Own	0.1076*** (3.46)	0.1063*** (3.41)	0.0296 (1.10)	0.0388 (1.44)	0.0103 (0.32)	0.0189 (0.57)
Large Non-Inst Block	-0.0548*** (-5.33)	-0.0550*** (-5.36)	-0.0505*** (-5.18)	-0.0509*** (-5.23)	-0.0453*** (-3.78)	-0.0460*** (-3.85)
Below Avg ESG Rank	-0.0101 (-1.12)	-0.0105 (-1.16)	-0.0020 (-0.30)	-0.0014 (-0.21)	-0.0066 (-0.71)	-0.0065 (-0.70)
Observations	31,749	31,749	31,299	31,299	31,760	31,760
Year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Adjusted R2	0.114	0.114	0.255	0.255	0.176	0.176

Panel B. Efficiency, investment, and capital structure metrics

	(1)	(2)	(3)	(4)	(5)	(6)
	Efficiency Metric		Investment Metric		Capital Structure Metric	
Ind-adj. COGS/Sales	0.0000 (0.08)	0.0000 (0.09)				
St. Dev. Ind-adj. COGS/Sales	-0.0000 (-0.16)	-0.0000 (-0.17)				
Ind-adj. PPE/Assets			0.0862*** (5.76)	0.0861*** (5.76)		
St. Dev. Ind-adj. PPE/Assets			0.0952 (1.59)	0.0958 (1.61)		
Ind-adj. Book Leverage					0.0008*** (5.13)	0.0008*** (5.11)
St. Dev. Ind-adj. Book Leverage					-0.0011*** (-2.61)	-0.0011*** (-2.63)
New 1% Block	0.0025 (0.46)		0.0078** (2.33)		0.0000 (0.00)	
New 1% Active Block		0.0079 (1.27)		0.0056 (1.57)		0.0059 (1.21)
Log(Var Daily Returns)	0.0053 (1.46)	0.0050 (1.37)	-0.0019 (-0.92)	-0.0020 (-0.97)	0.0130*** (4.30)	0.0127*** (4.23)
St. Dev. Ind-adj. ROE	0.0028 (0.44)	0.0024 (0.37)	-0.0094*** (-2.82)	-0.0095*** (-2.88)	-0.0017 (-0.35)	-0.0019 (-0.41)
Log Mkt Cap	0.0083*** (3.28)	0.0084*** (3.32)	0.0036** (2.45)	0.0034** (2.35)	-0.0052** (-2.34)	-0.0050** (-2.28)
Inst Block Own	-0.0107 (-0.43)	-0.0113 (-0.45)	0.0223 (1.41)	0.0251 (1.59)	-0.0324 (-1.50)	-0.0336 (-1.55)
Large Non-Inst Block	-0.0265*** (-2.95)	-0.0266*** (-2.96)	-0.0096* (-1.86)	-0.0099* (-1.94)	-0.0289*** (-4.26)	-0.0287*** (-4.24)
Below Avg ESG Rank	0.0019 (0.27)	0.0017 (0.23)	-0.0038 (-0.91)	-0.0039 (-0.93)	-0.0006 (-0.12)	-0.0009 (-0.16)
Observations	26,717	26,717	31,163	31,163	28,302	28,302
Year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Adjusted R2	0.0897	0.0898	0.0780	0.0778	0.112	0.112

Table 7. Total and variable compensation

This table presents firm-level analysis of total and variable CEO compensation on ESG-related (material) news. *All Categories Pulse News* (*Material Pulse News*) represents the maximum over a firm's fiscal year of the daily TruValue Pulse Score across all (material) SASB categories of ESG news. *Metric News* is the sum of (the maximum over a firm's fiscal year of) the news associated with the specific metrics incorporated in the CEO compensation contract. All other variables are defined in Appendix A. All models include year, industry, and country fixed effects. The t-statistics, calculated with standard errors clustered at the firm level, are reported in parentheses. Statistical significance at the 10%, 5%, and 1% level is denoted by *, **, and ***, respectively.

Panel A. Compensation and (material) ESG performance						
	(1)	(2)	(3)	(4)	(5)	(6)
	Total Comp	Stock+ Options+ Bonus	Stock+ Options	Total Comp	Stock+ Options+ Bonus	Stock+ Options
All Categories Pulse News	0.0029*** (6.63)	0.0033*** (7.34)	0.0042*** (8.54)	0.0016*** (3.10)	0.0021*** (3.49)	0.0028*** (4.43)
Material Pulse News				0.0019*** (3.53)	0.0017*** (2.92)	0.0018*** (2.92)
Metric News	0.0005*** (4.72)	0.0003** (2.12)	0.0003** (1.99)	0.0005*** (4.62)	0.0003** (2.07)	0.0003** (1.97)
3-yr Return	0.0012*** (5.16)	0.0022*** (7.56)	0.0022*** (7.22)	0.0011*** (4.82)	0.0020*** (7.07)	0.0021*** (6.85)
Log Mkt Cap	0.3901*** (44.38)	0.4958*** (69.74)	0.5112*** (70.44)	0.3846*** (41.46)	0.4893*** (67.53)	0.5053*** (68.19)
Observations	32,105	29,472	25,822	30,320	27,928	24,523
Year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Adjusted R2	0.482	0.546	0.579	0.478	0.543	0.578

Panel B. Compensation and metric types

	(1)	(2)	(3)	(4)	(5)	(6)
	Total Comp	Stock+ Options+ Bonus	Stock+ Options	Total Comp	Stock+ Options+ Bonus	Stock+ Options
ESG metric	0.0014 (0.07)	-0.0111 (-0.44)	0.0199 (0.71)	0.0004 (0.02)	-0.0180 (-0.70)	0.0172 (0.61)
Operating metric	0.0977*** (4.68)	0.0957*** (4.17)	0.1440*** (6.15)	0.1015*** (4.71)	0.1061*** (4.52)	0.1458*** (6.13)
Earnings metric	0.1835*** (4.15)	0.0178 (0.47)	0.0296 (0.73)	0.1742*** (3.74)	-0.0043 (-0.11)	0.0120 (0.29)
Market metric	0.2272*** (12.01)	0.2849*** (14.49)	0.3011*** (14.30)	0.2190*** (11.32)	0.2789*** (14.13)	0.2940*** (13.90)
All Categories Pulse News	0.0026*** (6.35)	0.0032*** (7.16)	0.0040*** (8.49)	0.0013*** (2.69)	0.0020*** (3.47)	0.0028*** (4.50)
Material Pulse News				0.0018*** (3.48)	0.0016*** (2.76)	0.0016*** (2.72)
Metric News	0.0003** (2.53)	0.0001 (0.78)	-0.0000 (-0.21)	0.0003** (2.50)	0.0001 (0.92)	-0.0000 (-0.12)
3-yr Return	0.0012*** (5.25)	0.0024*** (8.15)	0.0024*** (7.66)	0.0011*** (4.93)	0.0022*** (7.66)	0.0023*** (7.29)
Log Mkt Cap	0.3638*** (33.61)	0.4741*** (64.60)	0.4857*** (65.38)	0.3594*** (31.43)	0.4690*** (62.83)	0.4816*** (63.75)
Observations	32,105	29,472	25,822	30,320	27,928	24,523
Year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Adjusted R2	0.495	0.555	0.590	0.491	0.553	0.589

Panel C. ESG metric and news

	(1)	(2)	(3)	(4)	(5)	(6)
	Total Comp	Stock+ Options+ Bonus	Stock+ Options	Total Comp	Stock+ Options+ Bonus	Stock+ Options
ESG Metric	0.0672*** (3.41)	0.0418 (1.60)	0.0872*** (3.05)	0.0627*** (3.15)	0.0324 (1.22)	0.0804*** (2.80)
3-yr Return	0.0012*** (4.38)	0.0021*** (6.38)	0.0022*** (6.14)	0.0010*** (4.03)	0.0019*** (5.78)	0.0020*** (5.70)
ESG Metric X 3-yr Return	0.0000 (0.06)	0.0001 (0.15)	0.0000 (0.06)	0.0001 (0.30)	0.0003 (0.44)	0.0002 (0.25)
All Categories Pulse News	0.0028*** (6.58)	0.0033*** (7.30)	0.0042*** (8.48)	0.0015*** (3.08)	0.0021*** (3.48)	0.0028*** (4.41)
Material Pulse News				0.0018*** (3.51)	0.0017*** (2.91)	0.0018*** (2.89)
Metric News	0.0003*** (2.74)	0.0001 (0.91)	-0.0000 (-0.06)	0.0003*** (2.75)	0.0002 (1.06)	0.0000 (0.04)
Log Mkt Cap	0.3896*** (44.26)	0.4955*** (69.74)	0.5106*** (70.34)	0.3842*** (41.37)	0.4891*** (67.51)	0.5049*** (68.12)
Observations	32,105	29,472	25,822	30,320	27,928	24,523
Year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Adjusted R2	0.482	0.546	0.579	0.478	0.543	0.578

Table 8. Shareholder votes

This table presents analysis of shareholder voting on say-on-pay and other management proposals as a function of the number of compensation metrics in the CEO contract. In Panel A, we consider the mean approval rate on say-on-pay proposals (columns 1 and 2) and the average vote against management on all management proposals (columns 3 and 4). In Panel B, we study the number of metrics as a function of the mean vote against say-on-pay proposals in the past year (columns 1 and 3) or in the past three years (columns 2 and 4). In Panel C, we examine the role of ESG, operating, earnings, and market metrics on the mean approval rate on say-on-pay proposals. All regressions control for the contemporaneous total CEO compensation and lagged firm controls defined in Appendix A. All models include year, industry, and country fixed effects. The t-statistics, calculated with standard errors clustered at the firm level, are reported in parentheses. Statistical significance at the 10%, 5%, and 1% level is denoted by *, **, and ***, respectively.

Panel A. Shareholder votes				
	(1)	(2)	(3)	(4)
	Mean Say-on-Pay Approval		Avg. Vote Against Mgmt	
Num Metric Types	0.0048*** (3.97)		-0.0040*** (-6.35)	
Num Individ. Metrics		0.0020*** (2.92)		-0.0018*** (-5.14)
All Categories Pulse News	0.0001** (2.13)	0.0001** (2.23)	-0.0001*** (-2.59)	-0.0001*** (-2.73)
Total Comp	-0.0217*** (-8.93)	-0.0215*** (-8.85)	0.0028*** (3.38)	0.0026*** (3.19)
3-yr Return	0.0005*** (5.90)	0.0005*** (5.88)	-0.0001*** (-3.20)	-0.0001*** (-3.18)
Log Mkt Cap	0.0082*** (6.21)	0.0083*** (6.37)	-0.0060*** (-12.09)	-0.0061*** (-12.50)
Inst Block Own	0.0457*** (6.07)	0.0468*** (6.21)	-0.0237*** (-6.82)	-0.0246*** (-7.00)
Large Non-Inst Block	0.0036 (1.04)	0.0031 (0.91)	-0.0003 (-0.17)	0.0001 (0.07)
Below Avg ESG Rank	-0.0075*** (-3.35)	-0.0075*** (-3.32)	0.0016 (1.50)	0.0015 (1.45)
Observations	24,817	24,817	29,232	29,232
Year FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Country FE	YES	YES	YES	YES
Adjusted R2	0.0501	0.0495	0.0934	0.0918

Panel B. Say-on-pay against

	(1)	(2)	(3)	(4)
	Num Metric Types		Num Indiv. Metrics	
Mean Say-on-Pay Against Vote	0.1402*** (2.96)		0.2485*** (2.94)	
3-yr Mean Say-on-Pay Against Vote		0.3358*** (3.92)		0.5279*** (3.41)
All Categories Pulse News	0.0003 (0.81)	0.0003 (0.96)	0.0000 (0.02)	-0.0000 (-0.03)
3-yr Return	-0.0003 (-0.91)	-0.0004 (-1.28)	-0.0006 (-1.07)	-0.0006 (-1.38)
Log Mkt Cap	0.0631*** (3.41)	0.0728*** (4.24)	0.0356 (1.09)	0.0500* (1.68)
Inst Block Own	0.1992*** (3.28)	0.1936*** (3.28)	0.2501** (2.35)	0.2155** (2.12)
Large Non-Inst Block	-0.0367 (-1.00)	-0.0369 (-1.09)	0.0563 (0.85)	0.0429 (0.71)
Below Avg ESG Rank	0.0029 (0.21)	0.0004 (0.03)	-0.0037 (-0.14)	-0.0030 (-0.12)
Observations	23,869	26,201	23,869	26,201
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Adjusted R2	0.705	0.717	0.690	0.697

Panel C. Shareholder votes and individual metrics

	(1)	(2)	(3)	(4)	(5)
	Mean Say-on-Pay Approval				
Num Indiv. Metrics	0.0020*** (2.92)	0.0024*** (2.66)	0.0025** (2.57)	0.0017** (2.24)	0.0017** (2.37)
Num ESG Metrics		-0.0015 (-0.90)			
Num Operating Metrics			-0.0011 (-0.66)		
Num Earnings Metrics				0.0020 (0.88)	
Market metric					0.0026 (1.06)
All Categories Pulse News	0.0001** (2.23)	0.0001** (2.21)	0.0001** (2.23)	0.0001** (2.21)	0.0001** (2.22)
Total Comp	-0.0215*** (-8.85)	-0.0215*** (-8.87)	-0.0215*** (-8.85)	-0.0215*** (-8.88)	-0.0215*** (-8.85)
3-yr Return	0.0005*** (5.88)	0.0005*** (5.88)	0.0005*** (5.88)	0.0005*** (5.88)	0.0005*** (5.88)
Log Mkt Cap	0.0083*** (6.37)	0.0083*** (6.36)	0.0083*** (6.33)	0.0083*** (6.30)	0.0083*** (6.32)
Inst Block Own	0.0468*** (6.21)	0.0466*** (6.19)	0.0467*** (6.18)	0.0465*** (6.17)	0.0466*** (6.18)
Large Non-Inst Block	0.0031 (0.91)	0.0032 (0.93)	0.0032 (0.93)	0.0032 (0.93)	0.0033 (0.95)
Below Avg ESG Rank	-0.0075*** (-3.32)	-0.0075*** (-3.32)	-0.0075*** (-3.33)	-0.0075*** (-3.31)	-0.0075*** (-3.33)
Observations	24,817	24,817	24,817	24,817	24,817
Year FE	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES
Adjusted R2	0.0495	0.0495	0.0495	0.0495	0.0495

Table 9. ESG and other shareholder proposals

This table presents analysis of ESG proposals (Panel A) and the total number of shareholder-sponsored proposals (Panel B) as a function of various compensation metrics and the number of metrics included in the CEO contract. *ESG Proposal* is an indicator equal to one if a firm receives at least one shareholder-sponsored ESG proposal in a given year. Panel B considers all shareholder proposals, excluding proxy contests, in columns 1 and 2, and all shareholder proposals for which management recommends an “against” vote in columns 3 and 4. All regressions include lagged firm controls defined in Appendix A. All models include year, industry, and country fixed effects. The t-statistics, calculated with standard errors clustered at the firm level, are reported in parentheses. Statistical significance at the 10%, 5%, and 1% level is denoted by *, **, and ***, respectively.

Panel A. ESG proposals				
	(1)	(2)	(3)	(4)
	ESG Proposal			
ESG Metric	-0.0225*** (-3.80)	-0.0154*** (-2.63)		
Material ESG Metric			-0.0237*** (-3.15)	-0.0166** (-2.24)
Operating Metric		-0.0181*** (-3.80)		-0.0186*** (-3.64)
Earnings Metric		-0.0207*** (-3.08)		-0.0261*** (-3.61)
Market Metric		-0.0103** (-2.14)		-0.0115** (-2.26)
All Categories Pulse News	-0.0007*** (-6.55)	-0.0006*** (-6.28)		
Material Pulse News			-0.0005*** (-5.30)	-0.0005*** (-5.03)
3-yr Return	-0.0004*** (-4.77)	-0.0004*** (-4.76)	-0.0004*** (-4.56)	-0.0004*** (-4.56)
Below Avg ESG Rank	0.0021 (0.40)	0.0022 (0.42)	0.0035 (0.66)	0.0034 (0.64)
Log Mkt Cap	0.0360*** (15.59)	0.0382*** (15.80)	0.0370*** (15.46)	0.0396*** (15.72)
Inst Block Own	-0.1346*** (-9.82)	-0.1267*** (-9.43)	-0.1468*** (-9.95)	-0.1378*** (-9.54)
Large Non-Inst Block	0.0079 (1.51)	0.0041 (0.79)	0.0064 (1.14)	0.0025 (0.44)
Observations	31,367	31,367	28,724	28,724
Year FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Country FE	YES	YES	YES	YES
Adjusted R2	0.298	0.300	0.297	0.299

Panel B. Number of shareholder proposals

	(1)	(2)	(3)	(4)
	Num Shareholder Prop		Num Shareholder Prop (Mgmt. Rec Against)	
Num Metric Types	-0.0273** (-2.19)		-0.0316*** (-2.71)	
Num Indiv. Metrics		-0.0134* (-1.86)		-0.0154** (-2.30)
Total Comp	-0.0304 (-1.43)	-0.0311 (-1.45)	-0.0266 (-1.24)	-0.0275 (-1.27)
All Categories Pulse News	-0.0024*** (-6.77)	-0.0025*** (-6.74)	-0.0024*** (-6.90)	-0.0024*** (-6.87)
3-yr Return	-0.0018*** (-4.79)	-0.0018*** (-4.78)	-0.0017*** (-4.78)	-0.0017*** (-4.77)
Log Mkt Cap	0.1545*** (9.36)	0.1536*** (9.41)	0.1523*** (9.27)	0.1513*** (9.30)
Inst Block Own	-0.4827*** (-10.96)	-0.4882*** (-10.92)	-0.4820*** (-11.16)	-0.4884*** (-11.15)
Large Non-Inst Block	-0.0007 (-0.04)	0.0013 (0.09)	-0.0020 (-0.13)	0.0003 (0.02)
Below Avg ESG Rank	0.0109 (0.70)	0.0106 (0.67)	0.0043 (0.29)	0.0039 (0.26)
Observations	29,235	29,235	29,235	29,235
Year FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Country FE	YES	YES	YES	YES
Adjusted R2	0.209	0.209	0.182	0.182

Table A1. Operating and earnings metrics

This table presents regressions of CEO compensation on sales, cashflow, and efficiency metrics and their interactions with measures of firm performance. All regressions include lagged firm-level controls defined in Appendix A and year, industry, and country fixed effects. The t-statistics, calculated with standard errors clustered at the firm level, are reported in parentheses. Statistical significance at the 10%, 5%, and 1% level is denoted by *, **, and ***, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Total Comp	Stock+ Options+ Bonus	Stock+ Options	Total Comp	Stock+ Options+ Bonus	Stock+ Options	Total Comp	Stock+ Options+ Bonus	Stock+ Options
Sales Metric	0.1024*** (3.70)	0.0939*** (4.13)	0.1212*** (4.99)						
Ind-adj. Sales/Assets	0.0032 (0.15)	-0.0383 (-1.43)	-0.0547** (-2.02)						
Sales Metric X Ind-adj Sales/Assets	-0.0106 (-0.36)	0.0048 (0.14)	0.0203 (0.61)						
Profitability Metric				0.2258*** (5.55)	0.0804* (1.89)	0.0913* (1.93)			
Ind-adj. Profitability				-0.2221*** (-3.37)	-0.3548*** (-5.35)	-0.3020*** (-4.67)			
Profitability Metric X Ind-adj Profitability				0.1124 (1.19)	0.0953 (1.06)	0.1272 (1.31)			
Efficiency Metric							0.0903*** (3.16)	0.1210*** (4.70)	0.1592*** (6.02)
Ind-adj. COGS/Sales							0.0003 (1.26)	0.0002 (0.83)	0.0000 (0.06)
Efficiency Metric X Ind-adj. COGS/Sales							0.0003 (0.82)	-0.0002 (-0.42)	0.0002 (0.40)
3-yr return	0.0011*** (5.14)	0.0022*** (7.68)	0.0022*** (7.26)	0.0012*** (5.32)	0.0024*** (8.18)	0.0024*** (7.56)	0.0012*** (4.79)	0.0022*** (6.99)	0.0024*** (6.92)
Log Mkt Cap = L,	0.3936*** (44.35)	0.4976*** (71.82)	0.5123*** (70.58)	0.3889*** (38.63)	0.5057*** (67.71)	0.5191*** (68.76)	0.3925*** (40.95)	0.4909*** (66.85)	0.5012*** (67.64)
Observations	32,043	29,413	25,778	31,706	29,103	25,489	27,387	25,221	21,995
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adjusted R2	0.481	0.546	0.578	0.485	0.548	0.579	0.454	0.526	0.556

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