# Pay for Performance? CEO Compensation Alignment Post-SEC Rule Change

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**Abstract**

We analyze the impact of the SEC's new Pay Versus Performance rules on executive compensation disclosure and the market response. We find that the newly disclosed compensation actually paid metric is robustly related to shareholder returns, suggesting intentional alignment of management and shareholder interests. The new disclosures provide investors with novel information about the alignment of CEO compensation with firm performance. Investors respond positively when manager compensation actually paid falls after poor stock performance. They also show increased voting support when compensation actually paid suggests managerial incentives are aligned with shareholder returns. Our findings have implications for regulatory impact and firm strategies in executive pay design and disclosure.

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**Keywords**: Executive compensation, SEC disclosures, pay-for-performance, regulation

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## 1. Introduction

Extensive research has investigated aligning CEO and shareholder incentives through pay-for-performance (e.g., Jensen and Murphy, 1990; Coles et al., 2006; Edmans et al., 2017). Yet concerns persist about overpaying CEOs due to factors like luck (Bertrand and Mullainathan, 2001), biased performance metrics favoring CEOs (Morse et al., 2011), and high pay even during economic slumps (Acharya et al., 2000). Following the global financial crisis, CEO pay came under Congressional scrutiny, resulting in several new SEC rules under the 2010 Dodd-Frank Act, including the shareholder Say-on-Pay vote, CEO pay ratio, and pay-performance comparison, the latter of which became effective in proxy year 2023. This study takes a deep dive into the initial year of pay versus performance disclosures and the investor response.

The SEC's pay versus performance rule mandates firms to disclose and compare executive compensation actually paid (CAP) with the firm's stock returns and operating performance as well as the stock returns of its peers. Based on information in the summary compensation table (SCT), the fair value of equity-based pay represents around two-thirds of CEO remuneration at public companies. CAP adjusts the SCT total pay by accounting for factors like unvested and vested equity award values, dividends, and adjustments to pension value. Thus, firms can potentially report a positive or negative CAP. Firms must also disclose the most important financial measures that relate to their executive pay packages. The new information must be presented in both tables and graphs within the annual proxy statement to shareholders. Thus, the regulation aims to give investors a clearer understanding of executive pay relative to firm performance, while also streamlining information acquisition by standardizing how the data are displayed.

The pay versus performance disclosure rule took a dozen years for the SEC to finalize and was subject to strong differences of opinion in how investors might respond to the new

information. Advocates argue that disclosing compensation actually paid facilitates transparency, allowing shareholders to better evaluate the board's decision-making process regarding executive compensation policies. They note that it provides investors with a clearer understanding of the relation between firm performance measures and the compensation received by executives, which offers insights into the board's compensation design.[1] However, critics question the rule's practical value, fearing it may negatively influence the ways public companies remunerate executives and potentially skew investor perception of executive pay decisions. Moreover, they argue that disclosure obligations for public companies have grown more extensive and detailed over time, a trend demonstrated by the dense annual and quarterly reports they now submit.[2] This proliferation and escalating complexity in reporting requirements have led to what is referred to as "disclosure overload" (Paredes, 2003).

As with any new disclosure regulation, a key question that arises is whether it changes investor behavior in an economically meaningful way and, if so, how? We analyze the inaugural year of pay versus performance disclosures, first offering descriptive statistics and evaluating the mandate's initial impact. We hand-collect a novel dataset of 2,200 firms that disclose this information in 2023, primarily reflecting fiscal years 2020–2022. Coincidentally, the first year of disclosure follows the first double-digit drop in market returns in 14 years, offering a unique opportunity to examine investor responses to executive pay disclosures amid a declining market.[3]

We focus on CEO pay and create three measures to assess the impact of the new disclosure. The first approach is to create a *CAP/SCT* ratio by dividing the CEO's fiscal year CAP value by

[1] See U.S. SEC, "SEC Adopts Pay Versus Performance Disclosure Rules," August 25, 2022, available at https://www.sec.gov/news/press-release/2022-149

[2] See Comment Letter by Tom Quaadman, Vice President, Center for Capital Markets Competitiveness, U.S. Chamber of Commerce, June 30, 2015, available at https://www.sec.gov/comments/s7-07-15/s70715-26.pdf.

[3]The S&P 500 index returned -19.4% in 2022 and -38.5% in 2008. See https://en.wikipedia.org/wiki/S%26P_500.

the total compensation for the same year listed in the Summary Compensation Table (SCT) of the proxy statement, the latter of which firms have long disclosed. The SCT includes details of equity pay using fair value estimates of stock and option awards at the grant date. The second measure is an indicator variable, *negative CAP*, which equals 1 if the reported CAP is negative, and otherwise 0. A negative CAP is typically the result of a decline in the value of outstanding and unvested equity grants over the prior fiscal year due to poor stock performance.

The third approach is to generate measures of expected and unexpected CAP. We estimate *expected CAP* by regressing the CEO's CAP for fiscal year 2022 on CEO delta times the change in stock price, total compensation from the SCT, option and stock awards over the prior two fiscal years, and industry fixed effects. For this calculation, we estimate delta as the change in the dollar value of the CEO's wealth for a one percentage point change in stock price. The *unexpected CAP* is then computed as the reported CAP less the expected CAP, which reveals the surprise component of the new disclosure.

Using these measures, we first establish that CAP is robustly correlated with both total shareholder returns and its abnormal returns versus peer returns. These results suggest that executive pay structures are intentionally crafted to align CEO and shareholder interests. However, a regression of the CAP on other pay-for-performance measures, such as delta, total SCT compensation, prior equity awards, and industry fixed effects has an r-squared of only 0.439. This result suggests that the CAP disclosure reveals novel information about CEO pay and likely reduces information acquisition costs for investors.

We then provide descriptive statistics on how firms disclose the pay versus performance discussion. The average length of the pay versus performance section is three pages. It typically appears about nine pages after the SCT. On average, companies disclose three "most important

financial metrics" within the proxy, which we further describe below. Firms include an average of 2.6 graphs in the pay versus performance section, with a median value of three graphs.

We categorize the disclosure of the newly required most important financial metrics for executive pay into nine categories. Earnings before interest, taxes, depreciation, and amortization (EBITDA) is the metric reported by the most firms to be an important factor in compensation, found in 56% of filings. Revenue and net income are reportedly used by 37% and 31% of firms, respectively. Return on investment, actual shareholder returns, and relative shareholder returns each appear as the most important factors in approximately 20% of filings, while balance sheet items appear in 10%.

Despite its rising focus, environmental, social, and governance (ESG) metrics are only considered the most important factors in 5% of filings. This is markedly lower than the 75% of S&P 500 companies that supposedly use ESG metrics in executive pay according to a recent study.[4] A catch-all "other" category of important financial metrics is present in 23% of filings.

Our analysis next explores investor reactions to pay versus performance disclosures. We posit that variations in our four measures of CAP could influence stock prices due to its prominence, reduced information costs, and novel insights into CEO pay-performance alignment. We find that reporting a negative CAP correlates with significantly positive abnormal returns over the three- and seven-day windows around the proxy filing date, which is consistent with the context of negative average shareholder returns during fiscal year 2022. This result indicates an investor preference for executive compensation structures that align with their returns. We also find that a higher expected CAP yields small positive returns around the three-day window but not for the

[4] This study was conducted by The Conference Board and ESgauge. See Temple-West, P., and E. Xiao, "Investors warn 'fluffy' ESG metrics are being gamed to boost bonuses," *Financial Times*, August 27, 2023, available at https://www.ft.com/content/25aed60d-1deb-4a41-8f39-00c92702b663.

seven-day window, whereas the unexpected CAP yields no significant return. The lack of a strong market response to the proxy filing could reflect other information reveled to investors, such as board changes, shareholder proposals, or changes in governance provisions.

In our final test, we examine the link between CAP and Say-On-Pay voting, which is a non-binding, advisory vote by shareholders on executive compensation packages, also mandated by the Dodd-Frank Act. We find a negative correlation between a higher ratio of CAP to SCT pay and Say-On-Pay voting support. Firms that report a negative CAP value receive larger support for Say-On-Pay. This result is consistent with the observed positive market response to a negative CAP, indicating that investors prefer that CEO wealth declines following poor stock performance. In the context of Say-On-Pay votes, shareholders also signal their endorsement of a negative CAP when CEO pay suffers after poor financial results.

We also examine the link between Say-On-Pay voting and both the unexpected and expected CAP. We find a significant positive relation between unexpected CAP and Say-On-Pay voting support and a significantly negative relation with expected CAP. The negative response to a higher expected CAP is consistent with the notion of voting support declining for firms whose CEO compensation packages might be expected to handsomely compensate executives. However, the positive relation between Say-On-Pay and unexpected CAP suggests that new information provided by the CAP disclosure provides novel insights into how compensation practices tie to performance and that investors, on average, respond with additional voting support based on this information.

Our study provides the first examination of the initial impact of the SEC's 2022 Pay Versus Performance disclosure rules. Our findings elucidate how firms disclose newly required executive pay and performance metrics, and how investors respond to these disclosures. These findings can

be informative and useful for further policy deliberations and potential enhancements to this regulation.

Our findings enhance two areas of research. First, we build on the literature examining pay-for-performance in executive compensation (e.g., Jensen and Murphy, 1990; Coles et al., 2006). We analyze new data on actual CEO compensation and demonstrate its relation with firm performance metrics. Our results indicate investor reactions are attuned to CEO compensation that reflects firm outcomes, with positive feedback on compensation structures that tie closely to firm success. This suggests investors deem such data crucial for assessing if CEOs are rewarded in line with performance.

Second, our research contributes to the body of knowledge on the impact of SEC's executive compensation disclosure mandates. Previous research indicates that disclosures about executive compensation can be intricate and may become less transparent when compensation is not performance-based (e.g., Gipper, 2021). Our study reveals that transparency in reporting negative compensation actually paid aligns with positive market reactions, implying that investors appreciate when pay is clearly aligned with performance. This insight has potential implications for policies governing the disclosure of executive pay.

## 2. Pay Versus Performance (PVP) Rule

Pursuant to the Dodd-Frank Act of 2010, Congress instructed the SEC to establish a rule necessitating that firms disclose in their proxy statements the relation between executive CAP by the firm and its financial performance over the disclosure's time horizon. Although the SEC has historically required executive compensation disclosure, this rule introduces new information

concerning the actual amount paid to executives and how it correlates with the financial and operational performance of both the firm and its peer companies.

The SEC first proposed the PVP rule in 2015.[5] Following extensive public input, including 155 comment letters and 15 meetings with market participants (summarized in the Internet Appendix), the SEC reopened the comment period in January 2022.[6] The rule was ultimately finalized in August 2022.[7]

All SEC-reporting firms, except those classified as 1) Emerging Growth Companies, 2) Registered Investment Companies, or 3) Foreign-Private Issuers, must provide a PVP disclosure annually for fiscal years ending on or after December 16, 2022. As a result, the initial PVP disclosures will typically appear in calendar year 2023, based on data from fiscal year 2022, and will most commonly be reported in the proxy statement (typically SEC Form DEF 14A). Smaller Reporting Companies (SRCs) are permitted to provide scaled disclosures.

The new Item 402(v) of Regulation S-K mandates that firms present a table revealing specified executive compensation and financial performance metrics for the firm's three most recently completed years in its 2023 disclosure but gradually increasing to five fiscal years. The table must include, for the principal executive officer (PEO) and, on average, for the other named executive officers (NEOs), the summary compensation table (SCT) measure of total compensation, and a measure reflecting executive CAP calculated according to the rule.

At a high level, the calculation of CAP includes the value of the summary compensation table adjusted for the stock price at the end of the year and dividends granted during as well as

[5] Pay Versus Performance, Proposed Rule (April 2015), https://www.sec.gov/rules/proposed/2015/34-74835.pdf.
[6] Pay Versus Performance, Reopening of Comment Period for Pay Versus Performance (January 2022), https://www.sec.gov/rules/proposed/2022/34-94074.pdf. The public comments and meetings on the Pay Versus Performance rule are available here: https://www.sec.gov/comments/s7-07-15/s70715.htm.
[7] Pay Versus Performance, Final Rule (August 2022), https://www.sec.gov/rules/final/2022/34-95607.pdf. The SEC provides a summary fact sheet here: https://www.sec.gov/files/34-95607-fact-sheet.pdf.

adjustment to the fair value of the pension plan. Despite its name, the CAP does not necessarily represent actual compensation paid to an executive but is instead an approximation of compensation granted to an executive adjusted for the change in value of unvested awards. Therefore, it is possible that an executive with significant stock or option holdings might have a negative CAP if the decline in value of those holdings exceeds the executive's SCT total compensation during the year.

In addition to the CAP and SCT compensation, the PVP table must feature these financial performance measures: 1) Total shareholder return (TSR) for the firm's stock; 2) TSR for the firm's compensation peer group; 3) the firm's net income; and 4) a financial performance measure chosen by the company that represents the most important financial performance measure used to link CAP for the firm's NEOs to the firm's performance for the most recently completed fiscal year.

The new rule also mandates that firms provide a clear explanation of the relations between each of the financial performance measures in the PVP section and the CAP for its PEO, and for its other NEOs averaged over the firm's five most recently completed fiscal years. Firms must also include a description of the relations between the firm's TSR and its peer group TSR.

Additionally, the PVP rule mandates that the firm identify and report a list of three to seven financial performance measures deemed most important by the company (using the same approach as taken for the Company-Selected Measure). Firms are allowed, but not obligated, to include non-financial measures in the list if they regard such measures as among their "most important."

In the final rule, the SEC acknowledges that several comment letters highlight the potential for confusion if companies are required to include the disclosure in the CD&A section of the proxy statement, as it could imply that the company considered the PVP relation in its compensation decisions, which may not necessarily be the case. Consequently, the SEC notes that the final PVP

rule grants companies "flexibility in determining where in the proxy or information statement to provide the disclosure required." We provide examples of PVP disclosures in Appendix A.

## 3. Hypothesis Development

### *3.1. Determinants of Compensation Actually Paid*

The compensation of executives is frequently tied to a firm's stock performance for various reasons. A key rationale behind this linkage is to synchronize the objectives of the management with those of the shareholders. By pegging part of an executive's remuneration to how well the stock performs, there is an extra motivational layer for executives to enhance company outcomes, which in turn is likely to positively influence the stock's value.

Many executives receive stock options, restricted stock units (RSUs), or directly own shares in the company. Long-term incentive plans often include elements that vest over time and are tied to long-term stock performance. This could include long-term stock options or other types of deferred compensation that are influenced by stock price. Indeed, using data from the ISS incentives lab, we find that 64% of CEO compensation reported in the SCT over 2010 to 2019 stems from stock or stock options.

Performance bonuses for CEOs are sometimes tied directly to stock performance. Executives may earn a higher bonus when the stock is doing well and a reduced bonus or no bonus at all if the stock is underperforming. Some compensation plans are also tied to financial performance metrics that can influence the stock price, such as earnings per share (EPS) or return on equity (ROE). Achieving these metrics can influence the stock price and therefore also affect an executive's take-home pay.

CAP might be particularly sensitive to stock prices. Some contracts allow the company to "claw back" a portion of the compensation if performance targets, which often include stock price,

are not met or if the executive is found to be at fault for a decline in stock price. In fact, Edmans et al. (2023) point out that for both directors and investors, strong recent performance is the main rationale when considering pay raises for incumbent CEOs. Thus, changes in stock price can have a complex, multi-faceted impact on how executives are compensated. We posit:

**H1***: Measures of CAP will strongly correlate with TSR and abnormal values of TSR.*

CEO pay may not be closely tied to stock prices for various reasons, which could undermine support for H1. Executives may opt for stable, fixed salaries to reduce financial risk, and boards may agree to deter excessive risk-taking. Firms sometimes offer competitive fixed salaries to attract or retain top talent, regardless of stock performance. Contracts may also lock in CEO compensation irrespective of short-term stock changes. Finally, firms might link executive pay to other metrics like revenue growth or customer satisfaction, rather than stock returns.

External factors like market downturns or regulatory changes can affect stock prices independently of a CEO's actions, and boards may opt not to tie pay to such uncontrollable events or reprice stock options. Sensitivity to overall TSR and peer adjusted TSR can also vary. A time lag may exist between executive actions and stock performance, complicating direct linkage. In large and stable firms, stock prices might not fluctuate much, making other metrics more relevant for CEO pay (Schaefer, 1998). Each of these factors can contribute to the degree to which a CEO's compensation is linked to stock prices.

### *3.2. Stock price response to CAP disclosure*

We posit that there might be stock price response to a differential ratio of CAP versus SCT pay due to its salience, reductions in information acquisition costs about compensation design, and the value-relevant information on how the CEO's pay is tied to performance.

Shareholders have long expressed concerns about the complexity of compensation disclosures in CD&A section of the proxy statement. For example, SEC officials have echoed

shareholder frustration with boilerplate language and the increasing length of CD&A disclosures.[8] Firms with boilerplate and complex language in their disclosures have been shown to have delayed shareholder responses to new information (Cohen et al., 2020).

The PVP table's prominent placement in the proxy increases the salience of compensation information, making it more likely that investors will react to it. Prior to the rule, investors would have to make numerous assumptions about the impact of changes in stock prices on outstanding or unvested equity or pension plans. Walker (2016) observes that the lack of transparency in performance share plans poses risks for investors. He also points out that both accounting methods used for these plans lead to a consistent undervaluation in disclosures related to executive compensation and financial reporting. The PVP disclosure could reduce the uncertainty about how much value is transferred to executives based on performance (Edmans et al., 2017).

If the PVP disclosure reveals a significant gap between the CEO CAP and the reported SCT pay, this could trigger a stock price reaction, as investors may perceive this as a sign of good corporate governance. Conversely, if CAP does not differ substantially or misaligned incentives.

The tabular format of the PVP disclosure simplifies and standardizes the presentation of executive compensation information, thereby reducing information acquisition costs for investors. For example, Dong et al. (2016) show that the adoption of XBRL reduced information acquisition costs for investors. By organizing the data into an easy-to-read table, investors can quickly compare the actual pay received by executives with the company's performance and the

[8] One SEC official noted, "*We've heard that investors are becoming more and more frustrated by the increase in boilerplate language and CD&A length. We hear repeatedly that there is too much unnecessary bulk and we encourage you to see where you can shorten your disclosure by deleting unnecessary background and process-oriented information. The quality of your analysis is not measured by its length. We urge you to step back and make sure the real story is coming through loud and clear*." See Speech by SEC Staff: Executive Compensation Disclosure, November 9, 2009, https://www.sec.gov/news/speech/2009/spch110909sp.htm.

compensation of peer companies. This facilitates a more efficient evaluation of the alignment between executive pay and performance.

When information acquisition costs are reduced, investors could be more likely to incorporate the PVP data into their decision-making processes. This increased attention to executive compensation might lead to a more significant stock price response, as the market more readily absorbs and reacts to the information. The tabular format not only streamlines the assessment process but also promotes greater transparency and accountability in executive compensation, potentially contributing to a stock price response as investors gain a clearer understanding of the relation between pay and performance.

If the PVP data indicates that executives are being paid fairly based on performance, this could lead to a positive stock price reaction. But if CAP is not sensitive to performance, markets could respond negatively as shareholders might believe compensation structures are suboptimal. In fact, a study by Perry and Zenner (2001) shows that SEC disclosure rules on compensation in the early 1990s led to greater use of performance-based pay. Investors might expect the same from this disclosure rule.

Conversely, earlier studies reveal that SEC initiatives aimed at boosting transparency have sometimes led to higher CEO pay or myopic focus on short term results. For instance, Gipper (2021) finds that the introduction of CD&A disclosures in the 2007 proxy season was linked to rising compensation, contradicting the common belief that increased disclosure would lower pay through enhanced shareholder oversight. Similarly, Xiong and Jiang (2022) present a model where greater CEO pay transparency leads to myopic decisions to focus on near-term stock prices rather than long-term value behavior, which reduces firm profits. Thus, the PVP disclosure could spark

potentially negative reactions if investors believe boards respond to high CAP disclosures by making pay changes that do not maximize firm value.

There is some evidence that novel CEO compensation disclosures elicit a stock price response. For example, Pan et al. (2022) document a negative reaction to high CEO to worker pay disclosures in pro-social areas. Boone et al. (2023) show that high ratio firms experience reduced employee morale and productivity and attract negative media attention. Thus, there is some evidence that investors and other stakeholders view novel CEO pay disclosures as updating their views on the company's future stock price performance. Thus, we posit:

**H2***: The stock price will respond to the information revealed in CAP disclosures.*

We might not observe a response to PVP disclosure as investors might view this disclosure as politically motivated and another means by which political forces outside the firm can make populist claims of overpaid CEOs (Murphy, 2013). Moreover, in semi-strong form efficient markets, stock prices already reflect all publicly available information. As a result, some sophisticated investors might have roughly estimated the CAP value, so the PVP disclosure might not provide any new or relevant information that would lead to a stock price response. However, Bordalo et al. (2013) argue that salient information can impact individuals' decision-making processes by causing them to overemphasize its significance.

The PVP disclosure is only one piece of information among many that investors consider when evaluating a firm's stock price. Other factors such as financial performance, industry trends, and macroeconomic conditions might have a greater impact on stock prices, diminishing the effect of PVP disclosure on stock price movement.

### *3.3. Say-On-Pay voting support*

Research indicates that Say-On-Pay voting serves as an effective oversight tool for shareholders, especially when executive compensation is not closely tied to performance (Cai and

Walkling, 2011; Ertimur, et al., 2011; Dey, et al., 2023). Indeed, the introduction of Say-On-Pay voting regulations has led to a rise in performance-linked pay (Iliev and Vitanova, 2019).

Fresh insights into the pay for performance component of executive compensation could influence Say-On-Pay vote outcomes. Indeed, prior work links the first year of CEO pay ratio disclosures to a decrease in Say-On-Pay voting support when the CEO's pay is much higher than employees (Crawford et al., 2020). In the context of PVP, a wider gap between the CAP and the total pay listed in the SCT might bolster approval for CEO compensation plans. Investors could view this disparity as a clear indicator that the CEO's remuneration is performance-based, aligning their interests with the long-term prospects of the firm. As a result, shareholders might feel more confident that the CEO will make choices advantageous to both the company and its investors, making them more likely to back Say-On-Pay initiatives.

On the flip side, a high CAP-to-SCT ratio or a negative CAP could lead investors to be less supportive of executive pay packages, fearing it might negatively influence the CEO's risk-taking or motivation. Additionally, if the PVP table shows a CEO's compensation to be significantly different from industry peers, it may raise concerns of underpayment or overpayment. If the CAP and SCT amounts are nearly identical, it may indicate to shareholders that the CEO's compensation is not adequately performance based. Such perceptions could result in diminished support for Say-On-Pay proposals, as investors may worry that the existing pay structure does not sufficiently incentivize the CEO to enhance stock performance.

Likewise, if the PVP table displays a CEO's actual compensation that is higher than the SCT during an economic slump, it could serve as a red flag to investors by drawing a stark contrast between the CEO's pay and firm performance. This prominence of this information could prompt shareholders to vote against Say-On-Pay initiatives, potentially leading to calls for revisions in the

executive compensation framework or other governance enhancements. Due to these competing considerations, state H3 in the null form:

***H3****: PVP disclosure will not influence Say-On-Pay voting support.*

## 4. Research design and data

### *4.1. Sample selection and data sources*

We compile our sample by drawing from multiple datasets and supplementing them with hand-collected information. As the PVP disclosure is a novel rule, becoming effective largely in the first half of 2023, we begin our sample selection by identifying companies that have data either for the 2023 calendar year in the Center for Research in Security Prices (CRSP) database or for the 2022 fiscal year in Compustat. We exclude financial entities classified as unit investment trusts under SIC codes 6722 and 6726. After establishing this initial set of companies, we manually gather PVP disclosure data from proxy filings (typically form DEF 14A) using data from WRDS SEC Analytics Suite and the SEC's EDGAR database. We examine all proxy filings submitted between January 1, 2023, and August 15, 2023. Based on historical patterns, just over 80% of all public companies file their proxy during these months.

Information related to PEO compensation, criteria for setting compensation levels, as well as Firm and Peer TSR Growth and features of the PVP disclosure is manually collected either from the Execucomp database or SEC filings, most commonly DEF 14A documents. Accounting and stock return data are sourced from Compustat and CRSP or are hand-collected from 10-K filings when missing. Say-on-Pay voting outcomes are manually extracted from Form 8-K Item 5.07, which are filed with the SEC shortly after the annual shareholder meetings. Executive compensation and share ownership information used to estimate the Coles et al (2006) Delta measure is from Execucomp. Given Execucomp's limited coverage, analyses using this measure

include a smaller sample size than other analyses. Detailed definitions of the variables utilized are provided in Appendix B.

Our final sample comprises 2,219 firms for which we can obtain fiscal year 2022 PEO CAP values from the PVP disclosures, SOP voting results, and financial data. Of these 2,219 firms, 2,200 provide PEO CAP values for the year 2021, and 1,650 for 2020.[9] Thus, our sample size surpasses one that solely include firms from the Execucomp database and features a broader representation of the public markets, including smaller firms that are not in the S&P 1500 index.

### *4.2. Measures of CAP*

Considering the PVP disclosure's novelty, we utilize three distinct approaches to assess its impact. First, we create a *CAP/SCT ratio* by dividing the PEO's fiscal year CAP value by the total compensation for the same fiscal year as listed in the SCT. We exclude five observations where the SCT table indicates zero total compensation.

Second, we create an indicator variable called *negative CAP*, which is assigned a value of 1 if the CAP is negative and otherwise 0. We believe a negative CAP would be salient due to its contrast with investor expectations, as it suggests that the value of the PEO's unvested stock and option holdings declined by more than the total amount awarded to the PEO during the fiscal year.

Third, we generate measures of Expected and Unexpected CAP. We estimate Expected CAP through an OLS regression of the CEO's CAP for 2022 on the estimated Coles et al (2022) wealth Delta multiplied by the change in stock price, the total compensation from the Summary Compensation Table, as well as option and stock awards for 2020 and 2021, respectively. Table 4 provides the results. We then calculate Unexpected CAP, which is simply the actual CAP less the Expected CAP (i.e., the residual of the regression above).

[9] Note that SRCs are only required to disclose PVP data for 2021 and 2022, hence the drop-off between the number of observations in 2020 compared to 2021 and 2022.

### *4.3. Empirical models and statistical methods*

#### *4.3.1. Determinants of CAP*

To test H1, we use ordinary least squares (OLS) estimation to test for determinants of CAP:

$$CAP_{it} = \alpha + \beta TSR_{it} + X_{it} + FE + \epsilon_{it}\,, \quad (1)$$

where *i* and *t* indicate firm and year, respectively. We examine *CAP* using two measures, *CAP/SCT ratio* and *negative CAP*, which we describe in the prior subsection. The variables of interest involve two measures related to stock returns: 1) *TSR 1-Year*, which represents the total shareholder return as a percentage during the specified fiscal year, and 2) *Abnormal TSR 1-Year*, which is calculated as the one-year TSR percentage for the specified fiscal year minus the peer group's TSR percentage for the same fiscal year.

For other determinants ($X_{it}$), we use the log transformed value of total assets, *Ln(assets)*, to capture firm size, *leverage*, *market-to-book*, *return-on-assets*, *R&D-to-assets*, *CapEx-to-assets*, *sales-to-assets*, *intangibles-to-assets*, and *change in PEO*. We winsorize all continuous variables except *Ln(assets)* at the 1% level in each tail to reduce the skew of the distribution. We provide variable definitions in Appendix B. Eq. (1) includes industry FEs using the 2-digit Standard Industrial Classification (SIC) codes for cross-sectional tests of fiscal year 2022, and *industry*× *year* fixed effects for panel regressions of fiscal years 2020 through 2022.

#### *4.3.2. Expected and unexpected CAP*

To test whether the CAP reveals novel information, we bifurcate the reported values in anticipated and unanticipated components as follows. First, we estimate the expected CAP using OLS regressions of this equation:

$$Expected\ CAP_{it} = \alpha + \beta_1 Delta_{it} \times TSR_{it} + SCT\ Pay_{it} + Stock\ Awards_{it-1} + Stock\ Awards_{it-2} + Option\ Awards_{it-1} + Option\ Awards_{it-2} + FE + \epsilon_{it}\,. \quad (2a)$$

In this equation, *Delta* × *TSR* represents the estimated change in CEO wealth in FY 2022 due to the change in stock price (TSR) following the methodology of Coles et al. (2006), which defines delta as the change in the dollar value of the CEO's wealth for a one percentage point change in stock price. *SCT pay* represents the total CEO compensation from the Summary Compensation Table in FY 2022. The *stock awards* and *option awards* are the fair values of the equity grants from the SCT in fiscal years 2021 and 2020. We estimate equation within and without industry fixed effects, using 2-digit SIC codes. The unexpected CAP is then computed as the reported CAP less the expected CAP, which reveals the surprise component of the new disclosure:

$$Unexpected\ CAP_{it} = CAP_{it} - Expected\ CAP_{it} \quad (2b)$$

*4.3.3. Discretionary disclosure choices*

We provide descriptive evidence on four discretionary choices related to the PVP disclosure. The first metric, *PVP Pages*, represents the number of pages that span the PVP section in the proxy. The second variable, *PVP Distance from SCT*, quantifies the number of pages between the start of the PVP disclosure (where the table is usually shown) and the beginning of the SCT. This variable is intended to gauge the decision to position the PVP information either close to or distant from the SCT, where other PEO compensation metrics are presented and discussed.

Our third disclosure variable is the total count of Most Important Financial Measures (referred to as *MIFM count*) provided by each firm. These measures are usually found in a table at the end of the PVP section, although they can occasionally appear elsewhere within the PVP disclosure. Depending on the characteristics of each financial measure, we categorize them into one of nine distinct groups: EBITDA, Net Income, Revenue, Actual TSR, Relative TSR, ROI, ESG, Balance Sheet, and Other. We elaborate on these categories in the following subsection.

Firms have the option to include various graphs related to these metrics, which could influence the difficulty of information gathering and the prominence of CAP disclosures. Thus, we

compute a variable, *PVP Graph Count*, which tallies the number of graphs included in the PVP section. These images could help investors understand how firm performance compares to compensation peer firms and reflect the emphasis that a company chooses to place on the information presented in the PVP disclosure.

*4.3.4. Most important financial measures*

In our hand collection, we find that sample firms use 3,156 distinct MIFMs when classified strictly by the language in their filings, partially demonstrating the variety of measures that firms use. However, some of these differences are semantic. For instance, firms might use EBIT versus Earnings Before Interest and Tax or Earnings Before Interest and Taxes.

We organize the MIFMs into nine categories. The first category, labeled as "EBITDA," encompasses measures like earnings before income, tax, depreciation, and amortization (EBITDA), adjusted EBITDA, and earnings before income and tax (EBIT). It also includes other income statement metrics that fall between net revenue and pre-tax net income, such as operating income. The second category is "Net Income," featuring terms like net income, earnings per share or EPS, and pre-tax net income. The third category is called "Revenue," and it comprises terms like sales, revenue, net sales, net revenue, and revenue growth.

The fourth category is labeled "Actual TSR," which focuses on the stock price return independent of comparisons to other benchmarks. This category includes measures like total shareholder return, stock price, and actual TSR. In contrast, the fifth category, called "Relative TSR," consists of metrics that compare the firm's stock returns to another benchmark. The most used measures within this category are relative TSR and 3-Year relative TSR. Understanding the use of relative peer evaluation is important. Indeed, Gong et al. (2011) find that disclosing the use of relative performance evaluation allows investors to better understand compensation design.

The sixth category is titled Return on Investment, which we label "ROI." This category serves as a comprehensive grouping for any metrics that involve dividing net income by any balance sheet item. The most frequently encountered terms in this category are ROI, return on invested capital (ROIC), return on equity (ROE), and return on assets (ROA).

The seventh category is focused on "ESG." Within this category, ESG is the term most often used, followed by other frequently mentioned measures like total recordable incident rate (TRIR) and sustainability. The eighth category encompasses "Balance Sheet"-related items, featuring terms like working capital and leverage.

Lastly, any measures that do not fit into the previously mentioned categories are classified under the ninth category, "Other." The most frequently cited examples in this category are manager-specific objectives, such as individual performance goals, or investment-related goals like capital expenditures.

*4.3.5. Announcement returns*

We examine abnormal returns around the proxy filing. We calculate *abnormal return %* as the difference between the firm's return percentage and the return percentage of the S&P 500 during the relevant period. We measure information diffusion using a seven-day [-3,3] and three-day [-1,+1] windows.

We test H2, which is the relation between measures of CAP and abnormal returns, by estimating the following equation using OLS:

$$Returns_{it} = \alpha + \beta CAP_{it} + X_{it} + FE + \epsilon_{it}\,, \tag{3}$$

where *i* and *t* indicate firm and year, respectively. We separately test *abnormal return % [-1,0]* and *abnormal return % [-1,+1]* as the dependent variable. The variable of interest, *CAP*, is computed using the four measures, *CAP/SCT ratio, Negative CAP*, *Unexpected CAP*, and *Expected CAP*. The fixed effects and vector of controls ($X_{it}$) and are identical to Eq. (1) except that we add

*sales growth* and *multiple PEOs* as controls. For regressions that include *negative CAP*, we also include an additional control of the natural log of the PEO's reported compensation in the SCT, *Ln(PEO SCT)*, to account for differential pay levels. We use two-digit SIC codes for fixed effects.

*4.3.6. Changes in Say-On-Pay voting outcomes*

Our test of H3 examines the relation between CAP and the changes in Say-On-Pay advisory votes. We follow Dey et al. (2023) in calculating *Say-On-Pay voting support* as the number of votes for divided by the number of votes for and against the Say-On-Pay vote. We then compute the *change in Say-On-Pay voting support* as the difference in voting support in year t and t-1. The relation with CAP is estimated using OLS regressions of the following equation:

$$Change\ in\ SayOnPay\ voting\ support_{it} = \alpha + \beta CAP_{it} + X_{it} + FE + \epsilon_{it}\ , \quad (4)$$

where *i* and *t* indicate firm and year. The variable of interest, *CAP*, is computed using the four measures, *CAP/SCT ratio, Negative CAP*, *Unexpected CAP*, and *Expected CAP*. The fixed effects and vector of controls ($X_{it}$) are identical to Eq. (1), except we add a control for the log transformed number of days between the proxy filing and meeting date, *Ln(meeting distance)*, and a control for shareholder returns (*TSR 1-year*) since this might influence voting outcomes.

## 5. Results

### *5.1. Summary statistics*

Table 1 provides an overview of compensation metrics in Panel A and firm characteristics in Panel B. Panel A reveals that the average sample firm's CEO received a reported CAP of $48 million in 2020, $22 million in 2021, and $5 million in 2022. The median figures stand at $6.7 million for 2020, $6.2 million for 2021, and $2.4 million for 2022. The data suggests a correlation between market performance and PEO compensation. In years with higher market returns (2020-2021), PEOs also received higher compensation. Conversely, in 2022, a year marked by a market downturn, PEO compensation also declined.

[Insert Table 1 Here]

Panel A also indicates that CAP is generally greater than SCT in 2020 and 2021, when market returns were generally positive, but less than SCT in 2022, when market returns were weaker. This suggests that the CAP is sensitive to market returns.

During the sample period, the PEO's *CAP/SCT ratio* ranges between a median value of 0.8 and 1.1. The year 2020 saw a notably higher average *CAP/SCT ratio* of 2.29. In contrast, the average ratio was negative in 2022, signifying that the average CEO CAP was lower than the figures presented in the SCT amid the market downturn.

Panel A also presents data on TSR growth for the sample firms and their peers from 2020 to 2022. Both groups saw a rise in a $100 investment during 2020 and 2021 but experienced a significant setback in 2022 due to market downturns. Peer firms displayed a similar trend, with growth in 2020 and 2021 followed by a decline in 2022.

Panel B outlines the attributes of the sample firms in 2022. The typical firm experiences negative 1-year TSR and *return-on-assets*. The average market cap was $13.2 billion. These firms average a leverage ratio of 31% and exhibit an average sales growth rate of 23%. Sales make up about 65% of assets, and intangible assets account for an average of 18% of total assets. Additionally, 12% of the firms in the sample undergo a change in their PEO. Including the entire sample, 23% of firms undergo at least one change in their PEO.

***5.2. Determinants of compensation actually paid***

Our initial hypothesis explores the factors influencing three metrics related to CAP: the *CAP/SCT ratio* and instances of *negative CAP*. Summary statistics are displayed in Panel A of Table 2. For the fiscal year 2022, the average *CAP/SCT ratio* is -0.13, while the median is 0.78. These metrics indicate that both the mean and median firm had lower CAP than the figures

presented in the summary compensation table. During fiscal years 2020 to 2022, the average CAP/SCT ratio was 1.11. Around 20% of firms report a *negative CAP* in fiscal year 2022. This value drops to 11% in fiscal years 2020 to 2022, which includes years where the stock market achieved positive returns.

[Insert Table 2 Here]

Panels B and C assess H1, positing that both *TSR* and *abnormal TSR* will have a strong correlation with the measures of CAP. In columns 1 to 2 of panel B, we estimate Eq. (1) find that the 1-year TSR value is robustly linked to both the *CAP/SCT ratio* and *negative CAP*, each registering *t*-statistics greater than 15, signifying significance at the 1% level. Regarding other determinants, factors like *market-to-book*, *CapEx-to-assets*, and *change in PEO* display a significant relation with both the *CAP/SCT ratio* and *negative CAP*.

Columns 3 to 4 repeat the analysis with a panel regression over fiscal years 2020 to 2022. Again, we see a strong relation between 1-year TSR and both *CAP/SCT ratio* and *negative CAP*, with t-statistics greater than 20.

Panel C reexamines the factors affecting CAP, this time replacing 1-year TSR with abnormal 1-year TSR. Like the findings in Panel B, the *CAP/SCT ratio* and *negative CAP* maintain a statistically robust relation with abnormal 1-year TSR, with *t*-statistics equal to 13.23 and -15.80, respectively. Like Panel B, *abnormal TSR 1-year* is strongly related *to CAP/SCT ratio* and *negative CAP* in the panel tests reported in columns 3 and 4.

Collectively, these findings strongly support H1. The measures of CAP show a robust correlation with both actual TSR and its abnormal values. These results imply that executive compensation structures are purposefully designed to align the interests of shareholders and CEOs.

### *5.3. Expected and unexpected CAP*

In Table 3, we use OLS regressions to estimate Eq. (2a) to determine the expected CAP. This test first reveals whether CAP provides novel information on CEO pay-performance sensitivity based on compensation measures related that were available in the proxy filing or could be computed using public information. The results are presented in Panel A of Table 3.

[Insert Table 3 Here]

We estimate Eq. (2a) without industry FEs in column 1 and with industry FEs in column 2. Importantly, even when including industry FEs, the model only has an r-squared of 0.439. This indicates that the CAP provides new information to investors.

In terms of relation with other CEO pay variables, we find that the *CAP* for 2022 is highly correlated with the 2022 value of *Delta* × *TSR*, with a coefficient of 1.57 and a *t*-statistic of 18.55. The strong relations is unsurprising, given that the delta measure is intended to approximate CEO wealth sensitivity changes in the stock price. The coefficient on 2022 total compensation from the Summary Compensation Table is 1.12 with a *t*-statistic of 19.88. In contrast, we find significantly negative relations between each of the option and stock awards granted in 2020 or 2021. Literature shows that equity awards often vest over a three-year period (Pawliczek, 2021), so we would expect some of these awards to not have vested by 2022. The negative coefficients, though, are likely due to the market declines or perhaps multicollinearity with the delta measure.

Panel B provides summary statistics of the measures of expected CAP (Eq. 2a) and unexpected CAP (Eq. 2b). The average expected CAP is $6.9 million with a mean close to $6 million. The average and median unexpected CAP are both close to zero

### *5.3. Disclosure of pay versus performance*

Table 4 explores the choices firms make regarding discretionary disclosure in the PVP section of the proxy. Panel A presents disclosure statistics. The average length of the PVP section is 2.9 pages, typically appearing about nine pages after the SCT. Firms disclose on average three MIFMs within the proxy. Firms include an average of 2.6 PVP graphs, with a median value of three graphs. Note that SRCs are permitted but not required to provide either the MIFMs or graphs.[10]

[Insert Table 4 Here]

Panel B provides summary statistics on MIFMs. EBITDA is the most frequently occurring MIFM, appearing on average 0.83 times per filing across all firms and being identified in 56% of all filings. Revenue follows as the second most frequent measure, with an average occurrence of 0.42 times per filing and a presence in 37% of the filings. Net Income ranks third, appearing on average 0.37 times across all firms and being cited in 31% of filings. ROI is next, with an average frequency of 0.32 times per filing and a presence in 20% of filings. Both Actual TSR and Relative TSR are identified approximately 0.40 times per filing for all firms. Actual TSR appears in 19% of filings, while Relative TSR is found in 20% of filings.

An item from the Balance Sheet is cited as a metric an average of 0.11 times per filing and is present in 10% of all filings. Despite the heightened attention given to ESG issues in both corporate financial disclosures and the media, ESG metrics are part of the compensation components in only 5% of filings. They appear on average 0.07 times per filing across all firms.

[10] Managers might anticipate the investor response to PVP disclosures and take actions to influence its reception. In untabulated results, we find that the disparity between CAP and summary compensation table values affects the detail in the pay versus performance disclosures. Firms with CAP that is lower than the summary compensation table value typically offer more extensive discussions, additional graphs, and extra key financial metrics. However, there is no evidence that firms deliberately distance the pay versus performance section from the SCT to make comparisons more difficult or to reduce its salience.

Finally, the catch-all category labeled Other has an average frequency of 0.38 times per filing and is identified in 23% of all filings.

### *5.5. Stock price response to pay versus performance disclosure*

In Table 5, we analyze abnormal stock returns surrounding the date of the proxy filing. Panel A provides summary statistics. On average, the seven-day *abnormal return* centered on the day of the proxy filing is -0.38%, with a median value of -0.31%. The average three-day abnormal return centered around the proxy filing date is -0.31%, with a median of -0.20%.

[Insert Table 5 Here]

In Panel B, we evaluate H2 through regression analyses that examine the relation between CAP disclosure and abnormal returns around the date of the proxy filing, using Eq. (3). The analyses reveal no significant relation between the *CAP/SCT ratio* and *abnormal returns*. However, the presence of a *Negative CAP* is associated with a positive abnormal return ranging between 51 and 611 basis points over both the three-day and seven-day windows. This relation is statistically significant at the 5% level.

We interpret these results as indicative of investor favorability towards executive compensation structures that are more attuned to market conditions. The PVP disclosures elucidate this relation for investors, thereby reducing information uncertainty and enhancing clarity about the alignment of executive pay with corporate performance.

Column 6 shows that a higher expected CAP is positively but modestly related to investor returns during the three-day period. There is no relation between expected or unexpected CAP and investor returns over the seven-day period in column 3. The muted market reaction to the proxy filing might be due to investors considering other disclosed factors like director changes, shareholder proposals, or governance adjustments revealed in the same proxy filing.

### *5.6. Changes in Say-On-Pay voting support after pay versus performance disclosure*

In Table 6, we explore the relation between CAP and Say-On-Pay (SOP) voting results. Panel A presents summary statistics. For both calendar years 2023 and 2022, companies received nearly 90% average support in SOP votes. The median support levels were 94.2% and 94.7% for the respective years, indicating minimal variation in SOP support from one year to the next. The average and median dates for the meetings take place around 43 days after the proxy filing.

[Insert Table 6 Here]

In Panel B, we test H3 by estimating Eq. (4), where the dependent variable is the change in SOP voting support. Column 1 shows that a higher *CAP/SCT ratio* is associated with reductions in SOP voting support. The coefficient of -0.240 is statistically significant at the 1% level. We also find that *negative CAP* is associated with an increase in SOP voting support, which is consistent with the positive abnormal returns observed in Table 5. Column 3 shows that higher expected CAP associates with a decline in SOP voting support, where the coefficient is -0.336 with a $p<0.001$. However, reporting a higher unexpected CAP results in increased SOP voting support, where the coefficient is 0.180 that is significant at the 1% level. Thus, investors tend to withhold support for predictably large CEO pay packages, viewing them as potentially excessive. Conversely, when CAP disclosures reveal unforeseen links between pay and performance, it often garners increased shareholder support for executive pay, indicating that fresh insights from CAP data influence investor voting behavior.

Taken together, these findings are consistent with voters voicing their support for firms that align pay with performance and those where executives have reductions in pay following negative shareholder returns.

## 6. Conclusion

Our study investigates the impact of the SEC's newly mandated Pay Versus Performance disclosures on executive compensation and investor response, using a novel dataset of 2,200 firms for fiscal years 2020 to 2022. Amid the backdrop of an economic downturn and the S&P 500's first double-digit drop in 14 years, we find that the newly disclosed Compensation Actually Paid to CEOs is robustly aligned with total and relative shareholder return. However, the extent of pay-versus-performance disclosures varies with the disparity between actual compensation and summary table values.

We provide descriptive evidence on the detailed discussions and additional metrics provided in the pay-versus-performance disclosure. We also establish stylized facts on the categories of novel "most important financial metrics" disclosed under the rule. We find EBITDA to be the leading metric, which is consistent with firms aligning CEO pay with measures related to cash flows.

We further explore the market reactions to these disclosures. Negative actual compensation correlates with statistically significant positive abnormal stock returns, suggesting that investors prefer pay structures that are in line with their returns. Lastly, we find that higher expected compensation actually paid and realized ratios of actual to summary compensation are negatively correlated with Say-On-Pay voting support. Firms with higher unexpected compensation actually paid and those with negative compensation actually paid receive higher Say-On-Pay voting. These results indicates that investor support for executive pay is sensitive to when actual compensation significantly diverges from summary table value. Our study contributes to policy discussions on executive compensation disclosure and its market implications.

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## Appendix A. Examples of Pay Versus Performance (PVP) Disclosures

This appendix provides examples of the Summary Compensation Table (SCT) and Compensation Actually Paid (CAP) disclosures in the Pay Versus Performance (PVP) section of the proxy statement for two companies: Eli Lilly and Netflix. We present the information for the top two named executive officers in the SCT for brevity, which typically is the CEO and CFO. Note that the SCT was required prior to the PVP rule implementation. For Eli Lilly, their SCT appears on page 71 of the proxy statement.[11] Eli Lilly's PVP disclosure begins on page 81 (difference = 10 pages). For Netflix, their SCT appears on page 54 of the proxy statement.[12] Netflix's PVP disclosure begins on page 90 (difference = 36 pages).

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**Table A-1**. Eli Lilly's SCT and PVP Disclosures for Fiscal Year 2022

*Table A-1A. Summary Compensation Table*

**Executive Compensation**

**Summary Compensation Table**

| Name and Principal Position | Year | Salary ($) | Bonus ($) | Stock Awards ($) [1] | Non-Equity Incentive Plan Compensation ($) [2] | Change in Pension Value ($) [3] | All Other Compensation ($) [4] | Total Compensation ($) |
|---|---|---|---|---|---|---|---|---|
| David A. Ricks | 2022 | $1,500,000 | $0 | $ 16,981,250 | $2,700,000 | $0 | $216,885 | $21,398,135 |
| Chair, President, and Chief Executive Officer | 2021 | $1,500,000 | $0 | $ 14,966,000 | $2,475,000 | $2,442,235 | $126,750 | $21,509,985 |
| | 2020 | $1,483,333 | $0 | $13,587,500 | $2,625,500 | $5,883,924 | $128,372 | $23,708,629 |
| Anat Ashkenazi[5] | 2022 | $940,385 | $0 | $3,135,000 | $1,128,462 | $0 | $56,423 | $5,260,270 |
| Executive Vice President and Chief Financial Officer | 2021 | $850,432 | $0 | $2,453,000 | $906,894 | $395,335 | $51,026 | $4,656,687 |
| | 2020 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

[11] See https://www.sec.gov/ix?doc=/Archives/edgar/data/59478/000005947823000120/lly-20230317.htm.
[12] See https://www.sec.gov/ix?doc=/Archives/edgar/data/1065280/000119312523110513/d405125ddef14a.htm.

## Appendix A (Continued)

*Table A1B. PVP CAP Table*

### Pay versus Performance CAP Table

| Year | Summary Compensation Table Total for PEO[1] | Compensation Actually Paid to PEO | Average Summary Compensation Table Total for Non-PEO NEOs[2] | Average Compensation Actually Paid to Non-PEO NEOs | Value of initial fixed $100 investment based on: Total Shareholder Return | Value of initial fixed $100 investment based on: Peer Group Total Shareholder Return[3] | Net Income ($ millions) | Company Selected Measure (CSM) – Adjusted Non-GAAP EPS[4] |
|---|---|---|---|---|---|---|---|---|
| 2022 | $21,398,135 | $64,088,705 | $5,769,810 [5] | $13,893,269 | $292.18 | $133.61 | $6,245 | $8.84 |
| 2021 | $21,509,985 | $75,705,116 | $4,730,690 [6] | $4,563,545 | $217.66 | $121.90 | $5,582 | $8.25 |
| 2020 | $23,708,629 | $51,253,831 | $6,787,934 [7] | $10,732,708 | $131.06 | $102.07 | $6,194 | $6.89 |

[1] The PEO Summary Compensation Table to compensation actually paid reconciliation is summarized in the following table:

| Year | Summary Compensation Table Total | Summary Compensation Table Equity | Summary Compensation Table Change in Pension Value | Change in year-end value of prior years' awards unvested on 31-Dec-2022 plus change in value of prior year's awards that vested in 2022 | Pension Service Cost for each calendar year | PEO CAP |
|---|---|---|---|---|---|---|
| | *a* | *b* | *c* | *d* | *e* | *a-b-c+d+e* |
| 2022 | $21,398,135 | $16,981,250 | $0 | $59,048,474 | $623,346 | $64,088,705 |
| 2021 | $21,509,985 | $14,966,000 | $2,442,235 | $70,922,494 | $680,872 | $75,705,116 |
| 2020 | $23,708,629 | $13,587,500 | $5,883,924 | $46,356,324 | $660,302 | $51,253,831 |

[2] The average non-PEO NEO Summary Compensation Table to CAP reconciliation is summarized in the following table:

| Year | Summary Compensation Table Total | Summary Compensation Table Equity | Summary Compensation Table Change in Pension Value | Change in value of prior year's awards unvested on 31-Dec-2022 plus change in value of prior year's awards that vested in FY 2022 | Pension Service Cost for each calendar year | Non-PEO NEO CAP |
|---|---|---|---|---|---|---|
| | *a* | *b* | *c* | *d* | *e* | *a-b-c+d+e* |
| 2022 | $5,769,810 | $3,553,000 | $93,171 | $11,584,337 | $185,293 | $13,893,269 |
| 2021 | $4,730,690 | $3,115,360 | $159,911 | $2,972,681 | $135,445 | $4,563,545 |
| 2020 | $6,787,934 | $3,665,898 | $1,448,154 | $8,871,572 | $187,254 | $10,732,708 |

[3] The peer group used for calculating Peer Group Total Shareholder Return is the same peer group used by the company for benchmarking compensation, setting the growth goals for the performance award and for determining relative total shareholder return performance for the relative value award.

[4] For pay versus performance analysis, adjusted non-GAAP EPS aligns with the adjusted non-GAAP EPS values for performance awards in Appendix A, "Summary of Adjustments Related to the Annual Cash Bonus and Performance Award."

[5] The average CAP for 2022 comprised compensation for Ms. Ashkenazi, Dr. Skovronsky, Ms. Hakim and Mr. Jonsson.

[6] The average CAP for 2021 comprised compensation for Ms. Ashkenazi, Dr. Skovronsky, Mr. Van Naarden, Mr. Rau, and Mr. Smiley. Ms. Ashkenazi succeeded Mr. Smiley as CFO on February 9, 2021 when Mr. Smiley resigned his position.

[7] The average CAP for 2020 comprised compensation for Mr. Smiley, Dr. Skovronsky, Ms. Hakim and Mr. Zulueta.

*Table A1C. PVP Most Important Measures*

### Pay versus Performance: Most Important Measures

The measures most important in determining pay during 2022 were those most heavily weighted in our long-term incentive and annual bonus programs.

| Most Important Performance Measures |
|---|
| Adjusted non-GAAP EPS[1] |
| Total Shareholder Return |
| Revenue |

[1] For pay versus performance analysis, adjusted non-GAAP EPS aligns with the adjusted non-GAAP EPS values for performance awards in Appendix A, "Summary of Adjustments Related to the Annual Cash Bonus and Performance Award."

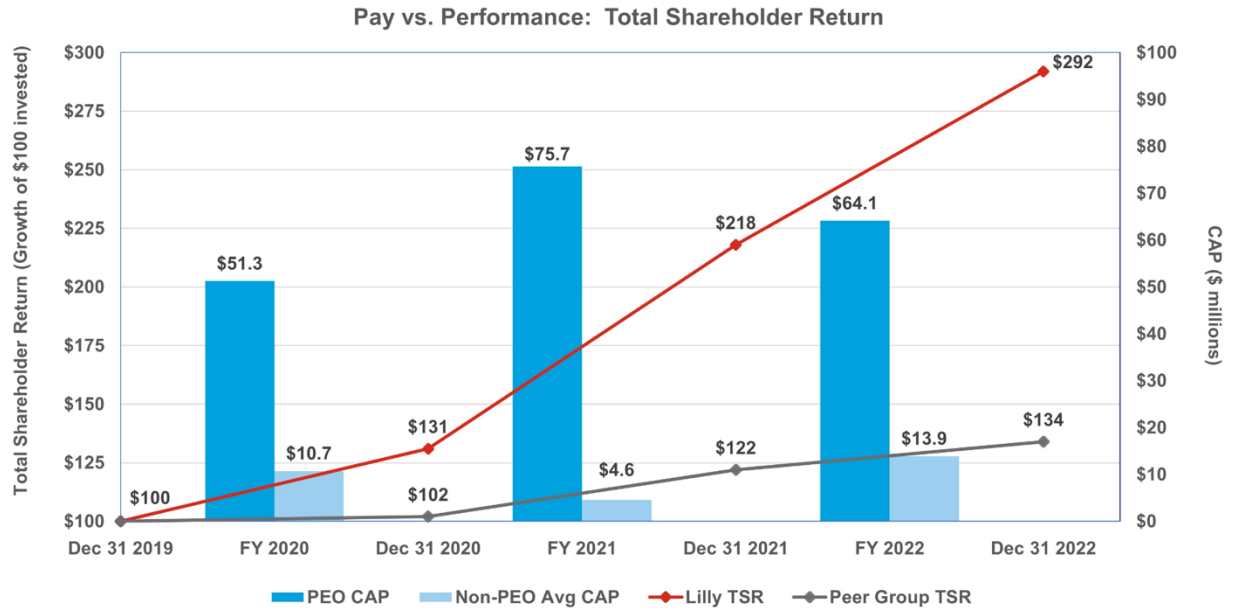
## Appendix A (Continued)

### *Table A1D. PVP Total Shareholder Return Graph*

**Pay versus Performance: Total Shareholder Return**

Over the immediately preceding three-year period, the company's total shareholder return (TSR) significantly exceeded the peer group's TSR. The company's chosen peer group is the same as the group used for benchmarking compensation, setting growth goals for the performance award and for determining relative TSR performance for the relative value award, which will pay out for the first time in early 2023.

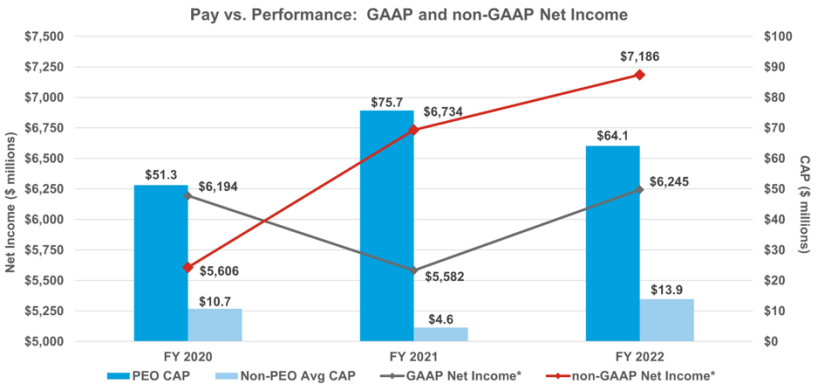
Lilly's relative TSR outperformance was likely substantially attributable to strong developments in our product pipeline and was a significant contributor to the PEO and non-PEOs' compensation over the three-year period. While the PEO CAP grew with each successive year of TSR outperformance, the highest growth occurred during 2021 when Lilly's TSR was 66 percent compared to 19 percent for the peer group. Non-PEO average CAP was impacted by the shifting of non-PEO membership by at least three members each year and the cancellation of compensation for the company's former CFO, who departed during the 2021 reporting year.




### *Table A1E. PVP Net Income Graph*

**Pay versus Performance: Net Income**

Lilly does not currently utilize GAAP or non-GAAP net income as a metric in any of its incentive programs; however, non-GAAP net income generally moves in a similar direction as our most important company selected measure (CSM), adjusted non-GAAP EPS. Generally, CAP is not heavily correlated with GAAP net income because GAAP net income includes certain items that the Talent and Compensation Committee believes are not reflective of the underlying performance of the business. By excluding the impact of (i) amortization of intangible assets primarily associated with costs of marketed products acquired or licensed from third parties, (ii) net losses or gains on investments in equity securities, and (iii) other specified items that are not reflective of underlying business performance, the Talent and Compensation Committee believes non-GAAP net income better represents the operating performance of the company and is more correlated to CAP. For comparison purposes, the graph below reflects both GAAP net income and non-GAAP net income against PEO and average NEO CAP. For additional information on non-GAAP financial metrics, see Appendix A, "Summary of Adjustments Related to the Annual Cash Bonus and Performance Award."

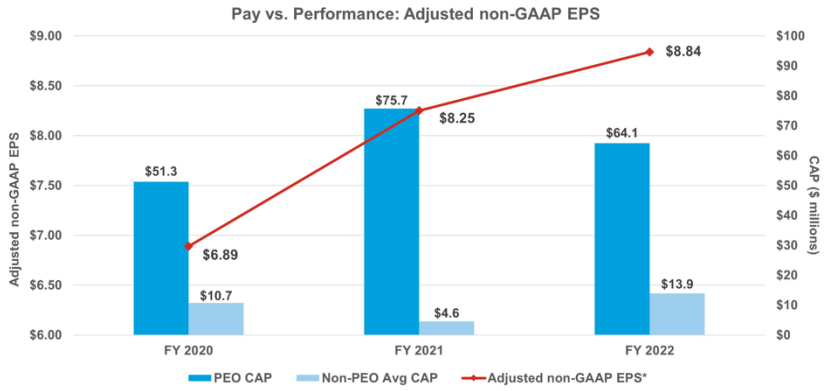


## Appendix A (Continued)

### *Table A1E. PVP Adjusted Non-GAAP EPS Graph*

**Pay versus Performance: Adjusted Non-GAAP EPS**

Lilly has chosen adjusted non-GAAP EPS as its most important CSM. Lilly leverages annual non-GAAP EPS derived from the board-approved business plan to set targets for the Lilly bonus. Additionally, Lilly uses a non-GAAP EPS derived from the median external analyst anticipated two-year non-GAAP EPS growth for our peer group to set our growth goal for our performance award. While these two approaches differ in performance period duration and source of performance comparison, significant sustained profitability growth can contribute to higher total CAP as seen in the graphic below. For additional information on non-GAAP financial metrics, see Appendix A, "Summary of Adjustments Related to the Annual Cash Bonus and Performance Award."

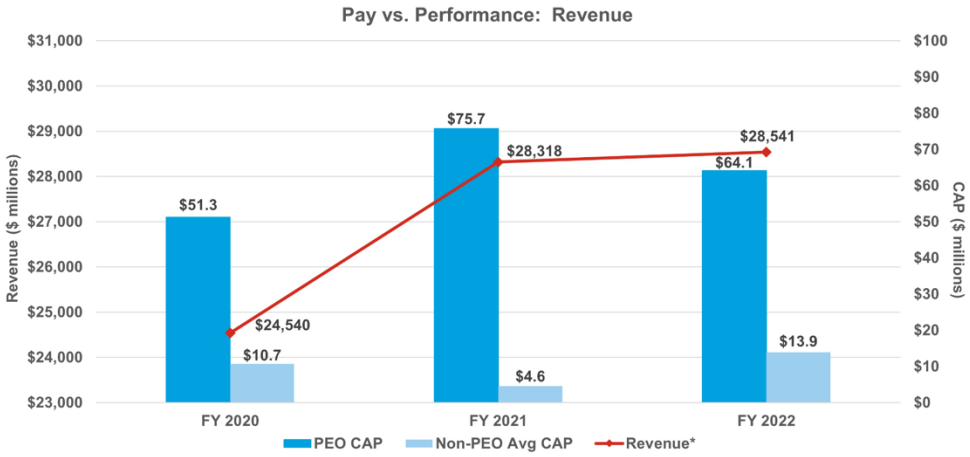



* Adjusted non-GAAP EPS data points are discrete outcomes. Trend lines added to depict alignment with PEO and average non-PEO CAP.

### *Table A1F. PVP Revenue Graph*

**Pay versus Performance: Revenue**

Lilly strives to make breakthrough medicines available to patients around the globe. Given a growing portfolio of new medicines, we motivate our entire workforce to reach as many patients as possible. The combination of a strong product portfolio and effective patient delivery yields higher sales volume and, generally, higher total revenue. A decline in product portfolio quality or effective launch execution reduces revenue. As such, revenue is one of our most important measures to ensure we are consistently growing the number of patients we serve. Our revenue curve over the preceding three-year period aligns with the growth in PEO and average non-PEO CAP.




* Revenue data points are discrete outcomes. Trend lines added to depict alignment with PEO and average non-PEO CAP.

## Appendix A (Continued)

*Table A1G. PVP Conclusions*

**Pay versus Performance: Conclusions**

The Talent and Compensation Committee believes in pay for performance and has structured the Lilly compensation programs to reward leaders when the company is delivering strong results. Lilly has had strong cumulative TSR and EPS growth over the immediately preceding three-year period. As a result of this strong performance, shareholders have been rewarded with significant total stock returns and leadership has been rewarded with above target payouts from their incentive compensation programs.

**Table A-2**. Netflix's SCT and PVP Disclosures for Fiscal Year 2022

*Table A-2A. Summary Compensation Table*

**Summary Compensation Table**

The following Summary Compensation Table sets forth information concerning the compensation paid to our Named Executive Officers in 2022, 2021, and 2020. A description of the method for determining the amount of salary in proportion to total compensation is set forth above in "Compensation Discussion and Analysis."

| Name and Principal Position(1) | Year | Salary ($) | Option Awards ($)(2) | All Other Compensation ($)(3) | Total ($) |
|---|---|---|---|---|---|
| REED HASTINGS<br>co-Chief Executive Officer, President, and Chairperson of the Board | 2022 | 650,000 | 49,408,182 | 1,015,055(4) | 51,073,237 |
| | 2021 | 650,000 | 39,731,118 | 442,607(4) | 40,823,725 |
| | 2020 | 650,000 | 42,428,87 | 147,146(4) | 43,226,024 |
| TED SARANDOS<br>co-Chief Executive Officer and Chief Content Officer | 2022 | 20,000,000 | 28,512,519 | 1,786,777(5) | 50,299,296 |
| | 2021 | 20,000,000 | 17,119,501 | 1,112,663(6) | 38,232,164 |
| | 2020 | 20,000,000 | 18,304,124 | 1,014,127(7) | 39,318,251 |

*Table A2B. PVP CAP Table*

**Pay-Versus-Performance Table**

The following table sets forth information concerning pay-versus-performance for 2022, 2021, and 2020. For all periods, Reed Hastings and Ted Sarandos served as co-Chief Executive Officers, and the other Named Executive Officers were Spencer Neumann, Chief Financial Officer; Greg Peters, Chief Operating Officer and Chief Product Officer; David Hyman, Chief Legal Officer; and Rachel Whetstone, Chief Communications Officer.

As discussed in the Compensation Discussion and Analysis section above, compensation for a given year is determined at the end of the prior year. The dollar amounts in the total column of the Summary Compensation Table and the Pay-Versus-Performance Table reflect the grant date fair values with respect to stock options granted during the respective fiscal year, computed in accordance with generally accepted accounting principles in the U.S. Those amounts may vary significantly year over year due to factors such as stock price volatility, as was the case for the years presented here, particularly for 2022 versus 2021. For example, almost the entire change in Mr. Hastings' reported compensation between 2022 and 2021 is due to the valuation of the stock options granted. From the Compensation Committee's standpoint, Mr. Hastings' stock option allocation remained flat at $34 million for 2021 and 2022, and the amount awarded to him was determined based on a predetermined formula using the stock price on each monthly grant. The accounting value of Mr. Hastings' stock option allocation increased from 2021 to 2022 due largely to the market-wide increase in trading volatility experienced in 2022 and the resulting impact of that stock price volatility on the grant date fair value.

The Company did not use financial performance measures in setting executive compensation during the periods presented.

| Year | Summary Compensation Table Total for Reed Hastings ($) | Summary Compensation Table Total for Ted Sarandos ($) | Compensation Actually Paid to Reed Hastings ($)(1) | Compensation Actually Paid to Ted Sarandos ($)(1) | Average Summary Compensation Table Total for Non-PEO NEOs ($)(2) | Average Compensation Actually Paid to Non-PEO NEOs ($)(1)(2) | Value of Initial Fixed $100 Investment Based On: Total Shareholder Return ($) | Value of Initial Fixed $100 Investment Based On: Peer Group Total Shareholder Return ($)(3) | Net Income ($ Thousands) |
|---|---|---|---|---|---|---|---|---|---|
| 2022 | 51,073,237 | 50,299,296 | 51,073,237 | 50,299,296 | 16,336,478 | 16,336,478 | 91.13 | 81.50 | 4,491,924 |
| 2021 | 40,823,725 | 38,232,164 | 40,823,725 | 38,232,164 | 12,097,270 | 12,097,270 | 186.19 | 134.41 | 5,116,228 |
| 2020 | 43,226,024 | 39,318,251 | 43,226,024 | 39,318,251 | 12,392,648 | 12,392,648 | 167.11 | 137.32 | 2,761,395 |

(1) As discussed in our Compensation Discussion and Analysis, the stock options granted in 2022, 2021, and 2020 vested immediately upon grant. As such, there was no difference between the grant date fair value of the stock option awards set forth in the Summary Compensation Table and the fair value of the stock option awards on the vesting date.

(2) The non-PEO Named Executive Officers for each of 2022, 2021 and 2020 were Messrs. Neumann, Peters and Hyman, and Ms. Whetstone.

(3) Represents the cumulative TSR of the RDG Internet Composite Index for each year.

## Appendix A (Continued)

*Table A2C. PVP Most Important Measures*

**Most Important Financial Performance Measures for Fiscal Year 2022**

The Company did not use financial performance measures to inform 2022 compensation for the Named Executive Officers. Rather, compensation practices were guided by market rates and tailored to account for the specific needs and responsibilities of the particular position, as well as the performance and unique qualifications of the individual employee. Please see the "Compensation Discussion and Analysis – Key Changes to the 2023 Compensation Program" for a summary of the annual performance-based cash bonus program that will be applicable to the co-Chief Executive Officers for 2023.

*Table A2D. PVP Total Shareholder Return Graph*

**Description of the Relationship Between Pay and Performance**

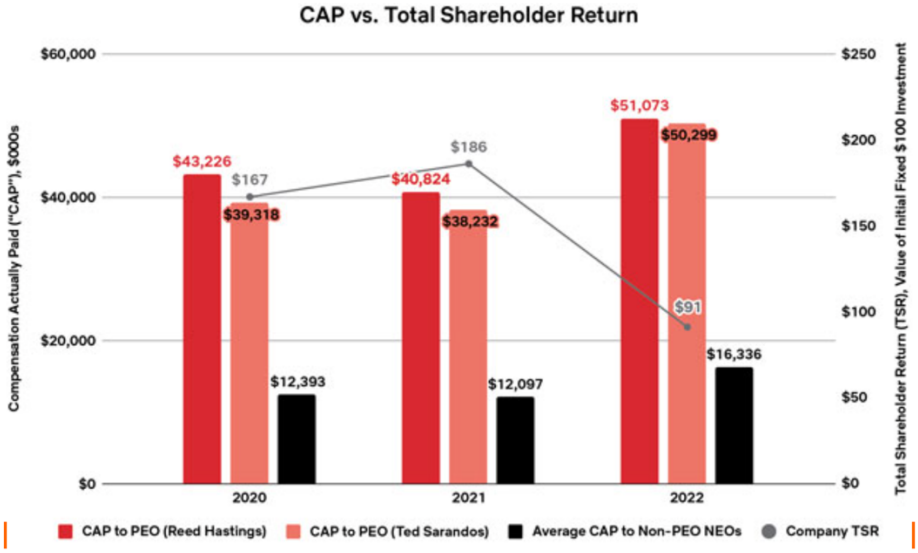
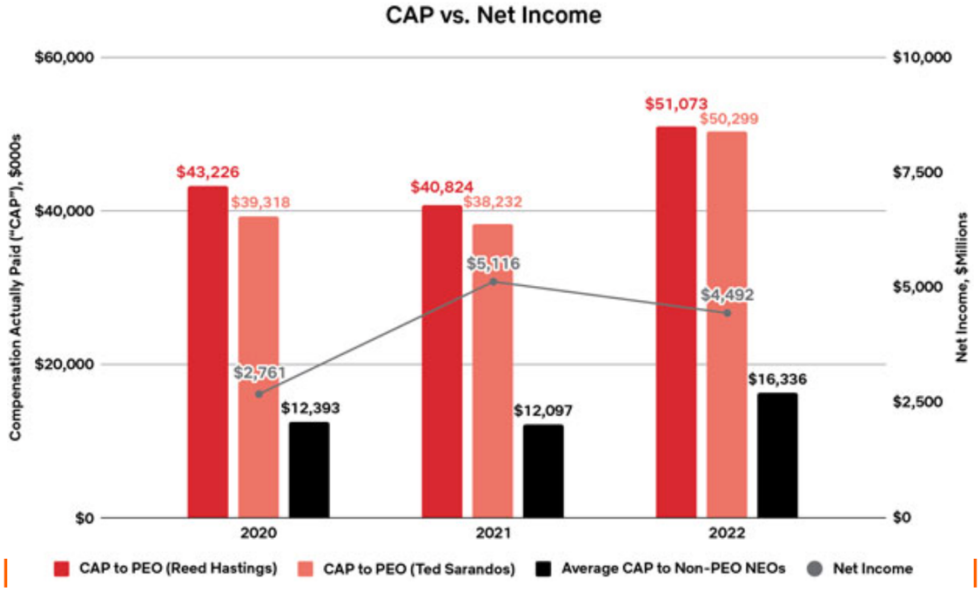



*Table A2E. PVP Net Income Graph*



**Appendix A (Continued)**

*Table A2E. PVP TSR versus Peer Group*

## Appendix B. Variable Definitions

| Variable | Definition |
|---|---|
| ***Compensation variables*** | |
| PEO SCT | Summary Compensation Table (SCT) pay for Principal Executive Officer (PEO) during fiscal year |
| PEO CAP | Compensation Actually Paid (CAP) to PEO during fiscal year |
| PEO CAP/SCT Ratio | CAP divided by SCT for the PEO in the specified fiscal year |
| Negative CAP | Equals 1 if CAP is negative; else 0 |
| Expected CAP | The expected value for CAP based on the OLS regression in Table 4. |
| Unexpected CAP | The residual of the OLS regression in Table 4. |
| Firm TSR Growth | Firm total shareholder return (TSR) is the value of $100 if invested at beginning of 2020 |
| Peer TSR Growth | Peer group TSR is the value of $100 if invested at beginning of 2020 |
| | |
| ***Firm characteristics*** | |
| TSR 1-year | The one-year TSR as a percent in the specified fiscal year |
| Abnormal TSR 1-year | The one-year TSR as a percent in the specified fiscal year less the peer group TSR |
| Market capitalization | Total market capitalization of equity in millions of dollars |
| Total assets | Total book value of assets in millions of dollars |
| Ln(assets) | The natural log of total assets |
| Leverage | Leverage is defined as long term debt divided by total assets |
| Market-to-book | Market value of equity plus long-term debt divided by total assets |
| Return-on-assets | Operating income after depreciation and amortization divided by total assets |
| R&D-to-assets | Research and development (R&D) expenses divided by total assets; zero if R&D is missing |
| CapEx-to-assets | Capital expenditures (CapEx) divided by total assets; zero if CapEx is missing |
| Sales-to-assets | Total revenue divided by total assets |
| Intangibles-to-assets | Book value of intangible assets divided by total assets |
| Sales growth % | Year-over-year sales growth as a percent |
| PEO change | Equals 1 if CEO turned over in the latest fiscal year; else 0 |
| Multiple PEOs | Equals 1 if the proxy lists a multiple PEOs over fiscal years 2020 to 2022; else 0 |

**Appendix B (Continued)**

| Variable | Definition |
|---|---|
| ***Filing returns*** | |
| Abnormal returns | The filing return for a stock less the S&P500 return during the specified period |
| | |
| ***Disclosure variables*** | |
| PVP pages | Total number of pages for proxy statement |
| PVP distance from SCT | Pages between start of the SCT and the PVP in the CD&A |
| MIFM count | Number of most important financial measures (MIFMs) in the PVP section |
| PVP graph count | Number of graphs supporting the PVP discussion |
| | |
| ***MIFM categories*** | |
| EBITDA | Count of MIFMs that reference earnings before interest tax depreciation and amortization |
| Net income | Count of MIFMs that reference net income |
| Revenue | Count of MIFMs that reference revenue |
| Actual TSR | Count of MIFMs that reference actual TSR |
| Relative TSR | Count of MIFMs that reference relative TSR |
| ROI | Count of MIFMs that reference return on investment (ROI) |
| ESG | Count of MIFMs that reference environmental, social, or governance (ESG) metrics |
| Balance Sheet | Count of MIFMs that reference balance sheet measures |
| Other | Count of MIFMs that reference other measures not in the eight categories above |
| | |
| ***Meeting variables*** | |
| Say-On-Pay voting support | Say-On-Pay voting support is votes for divided by votes for and against |
| Meeting distance after proxy | Number of days between proxy filing and annual shareholder meeting date |

## Table 1. Summary Statistics

This table presents summary statistics for our sample of 2,219 firms. Panel A presents compensation statistics disclosed in the pay for performance section of the proxy statement. *PEO CAP/SCT* is winsorized at the 1% level in each tail. *Firm TSR growth* and *Peer TSR growth* represent the value of a $100 dollar investment at the beginning of fiscal year 2020 through the end of each fiscal year. Panel B presents firm characteristics, which are winsorized at the 1% level in each tail for all variables except for market capitalization and total assets.

| Panel A. Compensation statistics | | | | | | |
|---|---|---|---|---|---|---|
| | Mean | SD | P25 | Median | P75 | Firms |
| PEO CAP ($M) | | | | | | |
| 2022 | 5.22 | 216.35 | 0.39 | 2.42 | 7.95 | 2,219 |
| 2021 | 21.86 | 327.53 | 1.71 | 6.16 | 16.94 | 2,200 |
| 2020 | 48.00 | 1066.12 | 2.39 | 6.69 | 15.82 | 1,650 |
| PEO SCT ($M) | | | | | | |
| 2022 | 7.85 | 10.47 | 2.13 | 5.49 | 10.30 | 2,219 |
| 2021 | 9.81 | 22.81 | 2.54 | 5.92 | 10.86 | 2,200 |
| 2020 | 9.70 | 33.00 | 2.94 | 5.59 | 10.51 | 1,652 |
| PEO CAP/SCT ratio | | | | | | |
| 2022 | -0.13 | 5.55 | 0.20 | 0.78 | 1.08 | 2,214 |
| 2021 | 1.41 | 2.21 | 0.78 | 1.13 | 1.77 | 2,195 |
| 2020 | 2.29 | 5.33 | 0.75 | 1.11 | 1.94 | 1,643 |
| Firm TSR growth ($) | | | | | | |
| 2022 | 119.15 | 119.52 | 61.00 | 103.55 | 144.00 | 2,217 |
| 2021 | 148.45 | 151.26 | 89.00 | 122.09 | 167.78 | 2,195 |
| 2020 | 138.88 | 235.72 | 88.03 | 108.34 | 143.00 | 1,647 |
| Peer TSR growth ($) | | | | | | |
| 2022 | 119.44 | 35.26 | 100.62 | 116.00 | 134.00 | 1,745 |
| 2021 | 138.25 | 36.07 | 119.00 | 132.23 | 152.27 | 1,726 |
| 2020 | 115.90 | 32.64 | 98.00 | 115.45 | 126.91 | 1,629 |

| Panel B. Firm characteristics | | | | | | |
|---|---|---|---|---|---|---|
| | Mean | SD | P25 | Median | P75 | Firms |
| TSR 1-year | -0.17 | 0.43 | -0.45 | -0.18 | 0.04 | 2,195 |
| Abnormal TSR 1-year | -0.03 | 0.29 | -0.21 | -0.02 | 0.14 | 1,726 |
| Market capitalization ($B) | 13.22 | 50.58 | 0.40 | 1.79 | 6.47 | 2,219 |
| Total assets ($B) | 21.42 | 136.57 | 0.58 | 2.29 | 8.50 | 2,219 |
| Ln(assets) | 7.66 | 2.15 | 6.37 | 7.73 | 9.05 | 2,219 |
| Leverage | 0.31 | 0.28 | 0.09 | 0.27 | 0.44 | 2,213 |
| Market-to-book | 1.66 | 1.93 | 0.70 | 1.12 | 1.94 | 2,213 |
| Return-on-assets | -0.04 | 0.37 | -0.04 | 0.03 | 0.10 | 2,219 |
| R&D-to-assets | 1.10 | 5.93 | 0.00 | 0.00 | 0.09 | 2,219 |
| CapEx-to-assets | 0.15 | 0.13 | 0.07 | 0.13 | 0.21 | 2,219 |
| Sales-to-assets | 0.65 | 0.62 | 0.17 | 0.50 | 0.93 | 2,219 |
| Intangibles-to-assets | 0.18 | 0.22 | 0.01 | 0.08 | 0.33 | 2,185 |
| Sales growth | 0.23 | 0.89 | 0.00 | 0.11 | 0.25 | 2,202 |
| PEO change | 0.12 | 0.32 | 0.00 | 0.00 | 0.00 | 2,219 |
| Multiple PEOs | 0.23 | 0.42 | 0.00 | 0.00 | 0.00 | 2,219 |

## Table 2. Determinants of Compensation Actually Paid

This table presents the determinants of the Compensation Actually Paid (CAP) during fiscal year (FY) 2022 and the average over fiscal years 2020-2022. Panel A presents summary statistics, including measures that compare CAP to pay values in the Summary Compensation Table (SCT). Panel B presents regressions with total shareholder return (TSR). Panel C presents regressions with abnormal TSR. In Panels B and C, columns 1–2 are for FY 2022 with industry fixed effects (SIC2). Columns 3–4 are panel regressions of FYs 2020-2022 with industry and fiscal year fixed effects. All regressions use OLS with *t*-statistics are presented in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% level, respectively. We define variables in Appendix B.

Panel A. Summary statistics

| | Mean | SD | P25 | Median | P75 | Firms |
|---|---|---|---|---|---|---|
| FY 2022 | | | | | | |
| CAP/SCT ratio | -0.13 | 5.55 | 0.20 | 0.78 | 1.08 | 2,214 |
| Negative CAP | 0.20 | 0.40 | 0.00 | 0.00 | 0.00 | 2,219 |
| FY 2020-2022 | | | | | | |
| CAP/SCT ratio | 1.11 | 2.83 | 0.57 | 1.00 | 1.54 | 6,054 |
| Negative CAP | 0.11 | 0.32 | 0.00 | 0.00 | 0.00 | 6,054 |

Panel B. Determinants of Compensation Actually Paid with TSR

| | Fiscal Year 2022 | | Fiscal Years 2020-2022 | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| | CAP/SCT Ratio | Negative CAP | CAP/SCT Ratio | Negative CAP |
| TSR 1-year | 2.042*** | -0.303*** | 1.767*** | -0.150*** |
| | (15.02) | (-15.79) | (29.56) | (-21.48) |
| Ln(assets) | -0.054 | 0.032*** | 0.060*** | 0.015*** |
| | (-1.54) | (5.49) | (2.86) | (5.07) |
| Leverage | 0.237 | 0.017 | -0.387*** | 0.020 |
| | (1.02) | (0.51) | (-2.67) | (1.21) |
| Market-to-book | -0.070** | 0.015*** | 0.164*** | 0.005*** |
| | (-2.18) | (3.36) | (11.37) | (3.22) |
| ROA | 0.166 | -0.045 | 0.046 | -0.057*** |
| | (0.83) | (-1.59) | (0.31) | (-3.39) |
| R&D-to-sales | 0.001 | 0.001 | -0.001 | 0.001 |
| | (0.12) | (0.33) | (-0.06) | (1.04) |
| CapEx-to-PPE | -1.038** | 0.137** | 0.265 | 0.119*** |
| | (-2.16) | (2.02) | (0.92) | (3.54) |
| Sales-to-assets | 0.219 | -0.039** | 0.006 | -0.029*** |
| | (1.63) | (-2.07) | (0.07) | (-3.00) |
| Intangibles-to Assets | 0.665** | -0.021 | -0.015 | -0.032 |
| | (2.11) | (-0.48) | (-0.08) | (-1.44) |
| PEO Change | 0.633*** | -0.172*** | 0.334*** | -0.114*** |
| | (3.64) | (-7.00) | (2.66) | (-7.79) |
| Ln(PEO SCT) | | -0.021*** | | -0.017*** |
| | | (-2.85) | | (-4.65) |
| Fixed effects | Industry | Industry | Ind×Year | Ind×Year |
| Count | 2,134 | 2,134 | 6,001 | 6,001 |
| Adjusted $R^2$ | 0.116 | 0.211 | 0.228 | 0.162 |

**Table 2 (Continued)**

| Panel C. Determinants of Compensation Actually Paid with abnormal TSR | | | | |
|---|---|---|---|---|
| | Fiscal Year 2022 | | Fiscal Years 2020-2022 | |
| | (1) | (2) | (3) | (4) |
| | CAP/SCT Ratio | Negative CAP | CAP/SCT Ratio | Negative CAP |
| Abnormal TSR 1-year | 2.864*** | -0.456*** | 1.929*** | -0.143*** |
| | (13.23) | (-15.80) | (24.02) | (-16.34) |
| Ln(assets) | -0.001 | 0.020*** | 0.120*** | 0.006* |
| | (-0.01) | (2.80) | (4.40) | (1.84) |
| Leverage | 0.380 | 0.005 | -0.499*** | 0.025 |
| | (1.25) | (0.12) | (-2.79) | (1.27) |
| Market-to-book | -0.079* | 0.019*** | 0.221*** | 0.003* |
| | (-1.76) | (3.16) | (13.08) | (1.74) |
| ROA | 1.314** | -0.305*** | 0.958*** | -0.301*** |
| | (2.20) | (-3.82) | (3.02) | (-8.69) |
| R&D-to-sales | 0.013 | -0.004 | 0.017 | -0.000 |
| | (0.56) | (-1.31) | (1.18) | (-0.30) |
| CapEx-to-PPE | -1.389** | 0.150* | 0.303 | 0.112*** |
| | (-2.27) | (1.84) | (0.87) | (2.92) |
| Sales-to-assets | 0.112 | -0.013 | -0.031 | -0.016 |
| | (0.67) | (-0.59) | (-0.31) | (-1.44) |
| Intangibles-to Assets | 0.553 | 0.038 | -0.017 | 0.011 |
| | (1.46) | (0.76) | (-0.08) | (0.48) |
| PEO Change | 0.641*** | -0.185*** | 0.296** | -0.109*** |
| | (3.04) | (-6.60) | (2.05) | (-6.96) |
| Ln(PEO SCT) | | -0.017** | | -0.017*** |
| | | (-2.23) | | (-4.53) |
| Fixed effects | Industry | Industry | Ind×Year | Ind×Year |
| Count | 1,734 | 1,734 | 5,054 | 5,054 |
| Adjusted $R^2$ | 0.169 | 0.226 | 0.222 | 0.165 |

## Table 3: Estimate of CEO Compensation Actually Paid

This table presents tests explaining variation in Compensation Actually Paid (CAP) and the estimates for expected and unexpected CAP for fiscal year (FY) 2022. In Panel A, *Delta × TSR 2022* represents the estimated change in CEO wealth in FY 2022 due to the change in stock price (total shareholder return or TSR) following the methodology of Coles et al. (2006). *SCT pay 2022* represents the total CEO compensation from the Summary Compensation Table (SCT) in FY 2022. The *option awards* and *stock awards* metrics represent the option and stock grants from the SCT for their respective fiscal years. We use 2-digit SIC codes for industry fixed effects in column 2. ***, **, * indicate significance at the 1%, 5%, and 10% level, respectively. Panel B presents summary statistics of expected CAP and unexpected CAP. We estimate *expected CAP* by regressing the CEO's CAP for fiscal year 2022 on CEO delta times the change in stock price, total compensation from the SCT, and option and stock awards over the prior two fiscal years. We define delta as the change in the dollar value of the CEO's wealth for a one percentage point change in stock price. The unexpected CAP is then computed as the reported CAP less the expected CAP, which reveals the surprise component of the new disclosure.

Panel A. Explaining variation in CAP

| | CAP 2022 | |
|---|---|---|
| | (1) | (2) |
| Delta × TSR 2022 | 1.57*** | 1.43*** |
| | (18.55) | (16.13) |
| SCT pay 2022 | 1.12*** | 1.06*** |
| | (19.88) | (18.26) |
| Option awards 2021 | -0.399*** | -0.421*** |
| | (-5.88) | (-6.06) |
| Option awards 2020 | -0.535*** | -0.611*** |
| | (-4.43) | (-4.78) |
| Stock awards 2021 | -0.342*** | -0.318*** |
| | (-5.78) | (-5.26) |
| Stock awards 2020 | -0.128*** | -0.118*** |
| | (-3.15) | (-2.90) |
| Fixed effects | None | Industry |
| Number of firms | 1,086 | 1,086 |
| Adjusted $R^2$ | 0.439 | 0.452 |

Panel B. Summary statistics of expected and unexpected CAP

| | Mean | SD | P25 | Median | P75 | Firms |
|---|---|---|---|---|---|---|
| FY 2022 | | | | | | |
| Expected CAP | 6.88 | 10.62 | 3.38 | 5.98 | 10.30 | 1,086 |
| Unexpected CAP | 0.01 | 12.64 | -2.88 | -0.18 | 3.14 | 1,086 |

**Table 4. Discretionary Disclosure Choices on Pay Versus Performance**

This table examines how Compensation Actually Paid (CAP) relates to disclosure choices in the pay versus performance (PVP) section of the proxy. In Panel A, we examine the length of the PVP section in the proxy (*PVP pages*), the number of pages between the Summary Compensation Table (SCT) and the PVP section (*PVP Distance From SCT*), the number of most important financial measures (*MIFM Count*), and the number of graphs in the PVP section (*PVP Graph Count*). In Panel B, we examine the most important financial measures (MIFMs) by category. We define variables in Appendix B.

| Panel A. Disclosure statistics | | | | | | |
|---|---|---|---|---|---|---|
| | Mean | SD | P25 | Median | P75 | Firms |
| PVP Pages | 2.86 | 1.30 | 2.00 | 3.00 | 4.00 | 2,209 |
| PVP Distance From SCT | 9.04 | 5.43 | 6.00 | 9.00 | 12.00 | 2,208 |
| MIFM Count | 2.92 | 2.07 | 1.00 | 3.00 | 4.00 | 2,219 |
| PVP Graph Count | 2.56 | 1.33 | 2.00 | 3.00 | 3.00 | 2,208 |

| Panel B. Most important financial measures | | | | | | |
|---|---|---|---|---|---|---|
| | Mean | SD | P25 | Median | P75 | Firms |
| Most Important Financial Measures | | | | | | |
| EBITDA | 0.56 | 0.50 | 0.00 | 1.00 | 1.00 | 2,219 |
| Net Income | 0.31 | 0.46 | 0.00 | 0.00 | 1.00 | 2,219 |
| Revenue | 0.37 | 0.48 | 0.00 | 0.00 | 1.00 | 2,219 |
| Actual TSR | 0.19 | 0.39 | 0.00 | 0.00 | 0.00 | 2,219 |
| Relative TSR | 0.20 | 0.40 | 0.00 | 0.00 | 0.00 | 2,219 |
| ROI | 0.20 | 0.40 | 0.00 | 0.00 | 0.00 | 2,219 |
| ESG | 0.05 | 0.23 | 0.00 | 0.00 | 0.00 | 2,219 |
| Balance Sheet | 0.10 | 0.29 | 0.00 | 0.00 | 0.00 | 2,219 |
| Other | 0.23 | 0.42 | 0.00 | 0.00 | 0.00 | 2,219 |
| | | | | | | |
| Firms with Non-ZERO MIFMs | | | | | | |
| EBITDA | 1.11 | 0.85 | 1.00 | 1.00 | 2.00 | 1,664 |
| Net Income | 0.49 | 0.66 | 0.00 | 0.00 | 1.00 | 1,648 |
| Revenue | 0.57 | 0.64 | 0.00 | 0.00 | 1.00 | 1,640 |
| Actual TSR | 0.27 | 0.46 | 0.00 | 0.00 | 1.00 | 1,636 |
| Relative TSR | 0.27 | 0.46 | 0.00 | 0.00 | 1.00 | 1,638 |
| ROI | 0.32 | 0.56 | 0.00 | 0.00 | 1.00 | 1,643 |
| ESG | 0.09 | 0.37 | 0.00 | 0.00 | 0.00 | 1,637 |
| Balance Sheet | 0.15 | 0.40 | 0.00 | 0.00 | 0.00 | 1,638 |
| Other | 0.51 | 0.94 | 0.00 | 0.00 | 1.00 | 1,656 |

## Table 5. Stock Price Response to Compensation Actually Paid Disclosure

This table examines how Compensation Actually Paid (CAP) relates to announcement returns around the proxy filing date. *Abnormal returns* are the cumulative daily returns of the stock less the return on the S&P500 index. Panel A presents summary statistics on *abnormal returns* as a percent around the windows [-1,0] and [-1,+1] around the proxy filing date. Panel B presents regressions using OLS with industry fixed effects (two-digit SIC). *t*-statistics are presented in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% level, respectively. We define variables in Appendix B.

Panel A. Summary statistics

| | Mean | SD | P25 | Median | P75 | Firms |
|---|---|---|---|---|---|---|
| Abnormal return % [-3,+3] | -0.38 | 6.67 | -4.21 | -0.31 | 2.09 | 2,182 |
| Abnormal return % [-1,+1] | -0.31 | 4.48 | -2.02 | -0.20 | 1.42 | 2,182 |

**Table 5 (Continued)**

| Panel B. Regressions of announcement returns | | | | | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | Abnormal Return % [-3,3] | | | Abnormal Return % [-1,+1] | | |
| CAP/SCT ratio | 0.006 | | | -0.005 | | |
| | (0.21) | | | (-0.35) | | |
| Negative CAP | | 0.606** | | | 0.505** | |
| | | (2.36) | | | (2.36) | |
| Unexpected CAP | | | 0.004 | | | 0.003 |
| | | | (0.25) | | | (0.32) |
| Expected CAP | | | 0.012 | | | 0.020** |
| | | | (0.69) | | | (2.11) |
| Ln(assets) | 0.039 | 0.040 | 0.019 | -0.005 | 0.002 | -0.007 |
| | (0.42) | (0.37) | (0.16) | (-0.09) | (0.04) | (-0.10) |
| Leverage | -0.868 | -0.906 | -0.160 | -0.526 | -0.561 | -0.449 |
| | (-1.41) | (-1.47) | (-0.20) | (-1.51) | (-1.61) | (-0.98) |
| Market-to-book | 0.217** | 0.222** | 0.245** | 0.006 | 0.011 | 0.047 |
| | (2.36) | (2.40) | (2.03) | (0.11) | (0.21) | (0.68) |
| Return-on-assets | 0.556 | 0.709 | 3.679* | 0.887** | 0.986** | 3.173** |
| | (0.75) | (0.95) | (1.67) | (2.11) | (2.35) | (2.56) |
| R&D-to-sales | 0.085*** | 0.087*** | -0.899 | 0.055*** | 0.056*** | 0.365 |
| | (3.02) | (3.08) | (-0.90) | (3.43) | (3.50) | (0.65) |
| CapEx-to-PP&E | -2.166* | -2.358* | -1.428 | -0.743 | -0.859 | -1.174 |
| | (-1.73) | (-1.88) | (-0.87) | (-1.05) | (-1.21) | (-1.26) |
| Sales-to-assets | -0.274 | -0.240 | -0.854** | 0.080 | 0.104 | -0.282 |
| | (-0.78) | (-0.69) | (-2.11) | (0.41) | (0.53) | (-1.24) |
| Intangibles-to-assets | 0.810 | 0.826 | 0.899 | 0.537 | 0.530 | 0.582 |
| | (0.98) | (1.00) | (0.96) | (1.14) | (1.13) | (1.10) |
| Sales growth | 0.152 | 0.150 | -0.933* | 0.257** | 0.260** | 0.098 |
| | (0.82) | (0.81) | (-1.66) | (2.46) | (2.50) | (0.31) |
| PEO Change | 0.416 | 0.464 | 0.777 | 0.159 | 0.195 | 0.431 |
| | (0.75) | (0.84) | (1.29) | (0.51) | (0.62) | (1.27) |
| Multiple PEOs | -0.963** | -0.893** | -0.678 | -0.285 | -0.233 | -0.140 |
| | (-2.30) | (-2.13) | (-1.54) | (-1.20) | (-0.98) | (-0.56) |
| Ln(PEO SCT) | | -0.039 | | | -0.042 | |
| | | (-0.29) | | | (-0.56) | |
| Fixed effects | Industry | Industry | Industry | Industry | Industry | Industry |
| Number of firms | 2,120 | 2,120 | 1,050 | 2,120 | 2,120 | 1,050 |
| Adjusted $R^2$ | 0.038 | 0.039 | 0.104 | 0.018 | 0.020 | 0.060 |

## Table 6. Compensation Actually Paid and Changes in Say-On-Pay Voting

This table examines how Compensation Actually Paid (CAP) relates to changes in Say-On-Pay voting support. *Say-On-Pay voting support* is calculated as votes for Say-On-Pay divided by the sum of votes for and against Say-On-Pay in year t (fiscal year 2022). To calculate *the change in Say-On-Pay voting support*, we difference the Say-On-Pay voting support in year t and the value in t-1. We control for the log transformed days between the proxy filing and annual meeting date (*meeting distance*) in regressions, as well as the *abnormal TSR*. Panel A presents summary statistics. Regressions in Panel B use OLS with industry fixed effects (two-digit SIC). *t*-statistics are presented in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% level, respectively. We define variables in Appendix B.

Panel A. Summary statistics

| | Mean | SD | P25 | Median | P75 | Firms |
|---|---|---|---|---|---|---|
| Say-On-Pay voting support $_{t}$ (%) | 89.745 | 12.471 | 87.643 | 94.232 | 97.225 | 2,219 |
| Say-On-Pay voting support $_{t-1}$ (%) | 89.976 | 13.133 | 89.177 | 94.651 | 97.590 | 1,888 |
| Change in Say-On-Pay voting support $_{t}$ | -0.054 | 13.959 | -2.785 | -0.159 | 2.068 | 1,888 |
| Meeting distance (days) | 43.019 | 9.342 | 41.000 | 43.000 | 46.000 | 2,217 |

**Table 6 (Continued)**

| Panel B. Compensation Actually Paid and change in Say-On-Pay voting support | | | |
|---|---|---|---|
| | (1) | (2) | (3) |
| | Change in Say-On-Pay voting support $_t$ | | |
| CAP/SCT ratio | -0.240*** | | |
| | (-3.16) | | |
| Negative CAP | | 1.667* | |
| | | (1.76) | |
| Unexpected CAP | | | 0.180*** |
| | | | (4.06) |
| Expected CAP | | | -0.336*** |
| | | | (-6.89) |
| Ln(assets) | | 0.654** | 0.801*** |
| | | (2.58) | (2.64) |
| Leverage | 3.099** | 3.001** | 5.832*** |
| | (2.19) | (2.12) | (2.70) |
| Market-to-book | -0.199 | -0.105 | -0.117 |
| | (-1.00) | (-0.53) | (-0.37) |
| Return-on-assets | -0.748 | -0.400 | 0.637 |
| | (-0.50) | (-0.25) | (0.10) |
| R&D-to-sales | -0.055 | -0.046 | -0.567 |
| | (-0.82) | (-0.69) | (-0.22) |
| CapEx-to-PP&E | -5.050 | -4.016 | -5.092 |
| | (-1.63) | (-1.30) | (-1.14) |
| Sales-to-assets | -0.482 | -0.379 | -1.623 |
| | (-0.59) | (-0.45) | (-1.56) |
| Intangibles-to-assets | 0.229 | 0.068 | 0.555 |
| | (0.12) | (0.03) | (0.22) |
| Sales growth | 0.508 | 0.565 | 0.214 |
| | (1.21) | (1.36) | (0.14) |
| PEO change | 0.850 | 0.970 | 1.977 |
| | (0.66) | (0.75) | (1.24) |
| Multiple PEOs | 0.271 | 0.252 | 0.455 |
| | (0.28) | (0.26) | (0.39) |
| Ln(meeting distance) | -0.408 | -0.268 | -2.204 |
| | (-0.21) | (-0.14) | (-0.72) |
| TSR 1-year | 4.345*** | 4.199*** | 4.841*** |
| | (4.52) | (4.19) | (2.68) |
| Ln(PEO SCT) | | -1.734*** | |
| | | (-5.19) | |
| Fixed effects | Industry | Industry | Industry |
| Number of firms | 1,818 | 1,818 | 995 |
| Adjusted $R^2$ | 0.009 | 0.020 | 0.077 |