The Salience of Headline Pay:
CEO Pay Responses to Rule-Induced Pay Restatements

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Abstract

We examine the impact of a disclosure reform that mandates many firms to restate executives' total pay from prior years. These restatements alter the *presentation* of executive pay without adding new information. Using hand-collected data on originally reported pay for U.S. public firms, we show that when a firm restates prior years' CEO pay upward (downward), the CEO receives a significant contemporaneous pay cut (raise). These adjustments are not explained by past or current firm performance. Higher-paid CEOs experience larger pay cuts, while firms with greater institutional block ownership grant smaller pay raises. Firms partially reverse pay cuts in the following year but not pay raises. Results hold for non-CEO executives and remain robust to a difference-in-differences design exploiting staggered rule implementation. The evidence suggests that merely re-presenting salient pay information can induce real changes in compensation policy beyond the reform's intended objectives.

JEL Classification: M12; J33; G32; M41

Keywords: Compensation disclosure, Compensation restatement, Reputation risk, Public perception, Strategic pay adjustments

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1. Introduction

Executive compensation, particularly pay magnitude, remains one of the most closely scrutinized corporate decisions made by U.S. public firms. To improve compensation disclosure quality, the SEC continuously refines reporting requirements, sometimes resulting in significant changes to how compensation information is presented to stakeholders. In this paper, we examine whether and how firms adjust their compensation policies in response to a SEC disclosure rule change that required a substantial number of firms to restate executive pay value for prior years. Understanding how firms react is crucial for evaluating the broader consequences of compensation disclosure reforms, particularly their effects on corporate decisions that can extend beyond the intended improvements in disclosure quality (Leuz and Wysocky, 2016).

Since 2006, public firms are required to disclose "a single figure for total compensation" for top executives in the Summary Compensation Table of annual proxy filings.[1] The disclosed total pay serves as the primary reference for shareholders and the public when assessing CEO compensation.[2] In 2009, the SEC issued the Proxy Disclosure Enhancements rule, which modified how executive compensation is reported in the Summary Compensation Table. Effective for fiscal years ending on or after December 20, 2009, the rule requires firms to report equity-based compensation using the grant-date fair value (GDFV) instead of the previously used accounting expense value under ASC 718. To facilitate year-to-year comparison, firms are also required to restate top executives' pay for the preceding years covered in the Summary Compensation Table.

We use the compensation disclosure of the CEO of St. Jude Medical, Inc., Daniel J. Starks, to

[1] https://www.sec.gov/files/rules/final/2006/33-8732a.pdf

[2] For example, in the TIME's 2022 article, "CEO Pay Was Up 21% in 2022. These Are the Most Overpaid CEOs, according to a Shareholder Advocacy Group", the CEO compensation data cited are based on the values of '*Total Compensation*' disclosed in the Summary Compensation Table of proxy filings. The article can be accessed through the following link: https://time.com/6256076/most-overpaid-ceos-2022/.

illustrate the restatement under the 2009 rule change (Appendix A). In proxy filings from 2007 and 2008, St Jude reported CEO annual total pay of $4,025,790 and $4,291,232 in the Summary Compensation Table, with 2007 and 2008 option grants valued at $1,731,315 and $1,866,669 respectively based on ASC 718 expense. In the 2009 proxy filing, St. Jude restated Mr. Starks' 2007 and 2008 total pay upward, as his 2007 and 2008 option grants values are revised to $4,568,352 and $6,424,380 based on GDFVs. As a result of the rule change, Mr. Starks' total compensation from 2007 and 2008 appears to be more than $7 million higher than previously reported, even though the underlying pay packages remain unchanged.

Notably, the restatement in St. Jude's 2009 proxy filing does not add new information regarding executive compensation for 2007 and 2008. Before the rule change, firms already report the GDFVs of stock and option grants in the Grants of Plan-Based Awards Table. In St. Jude's case, the restated GDFVs of the CEO's 2007 and 2008 equity grants have already been disclosed in detail in the corresponding proxy filings for those years.

The SEC notes that the revised rules "are not intended to steer behavior".[3] From a purely informational perspective, the restatement of executives' past pay should have little impact on compensation policy, as it neither introduced new information about pay nor came as a surprise. Indeed, the rule's adoption was well anticipated following a long debate among investors, accounting professionals, and the SEC over whether the GDFV of equity-based pay should be incorporated into the Summary Compensation Table.[4] Nevertheless, the rule led many firms to restate past executive pay values significantly upward or downward, sometimes by millions of dollars, in what is arguably the most visible and scrutinized metric in proxy statements: "Total Compensation" in the Summary Compensation Table. The salience of the restatement may influence how various stakeholders, including investors, boards, and executives, perceive and evaluate executive compensation. Even the SEC acknowledges that the new rule may indirectly lead boards to change "the amount of pay in some cases". Motivated by the dynamics, we

[3] https://www.sec.gov/files/rules/final/2009/33-9089.pdf

[4] January 25, 2007, Comment Letter "*Re: Executive Compensation Disclosure (File Number: S7-03-06)"* from the Council of Institutional Investors (https://www.sec.gov/files/rules/proposed/s70306/s70306-799.pdf).

examine whether the 2009 rule-induced pay restatement results in real changes in executive compensation.

Firms that significantly restate the previous years' CEO pay upward under the new rule may anticipate negative sentiment and increased scrutiny, as higher reported pay is often perceived as evidence of rent extraction or simply as "unfair" by the public. Prior research documents that negative public sentiment or scrutiny over executive pay can lead to lost shareholder support, accelerated executive turnover, reduced labor market values for executives and board members, damaged firm reputation in the eyes of customers and employees, and heightened regulatory risk (e.g., Jensen and Murphy, 1990; Bebchuk and Fried, 2006; Core, Guay and Larcker, 2008; Ertimur, Ferri, and Oesch, 2013; Edmans, Gabaix, and Jenter, 2017; among others). Anticipating such potential costs, boards may reduce the CEO's newly granted compensation in the restatement year to preempt potential concerns arising from higher restated pay. CEOs, in turn, may be more willing to accept these reductions to preempt criticism or reputational costs.

Some firms significantly restate prior years' CEO total pay downward under the 2009 rule, creating the impression that the executives are paid less than previously reported.[5] CEOs experiencing downward pay restatements may argue they were underpaid in previous years and use the restatement as an opportunity to bargain for higher compensation (Bebchuk, Fried, and Walker, 2002). Board members, anticipating a lower probability of public scrutiny and shareholder objection, may be more inclined to acquiesce. Thus, we expect CEOs to receive pay raises in the restatement year if their past pay is restated downward.

To test our predictions, we manually collect executives' compensation information in the Summary Compensation Table from the proxy statements filed around the rule change year for all public firms with valid Compustat accounting information. Our final sample consists of 2,758 unique U.S. public firms with required compensation, stock, and related accounting data before and after the rule change. Manual data collection is necessary because established compensation databases (such as Execucomp or Incentive Lab) replace original compensation values with restated values, making it impossible to track pay restatement.

We compare the restated values of the CEO's pay for prior years, as reported in the Summary

[5] How firms restate past total pay depends on how the rule affects the reported stock and option values in the Summary Compensation Table. We discuss the details regarding the rule's effect on reported equity values in Appendix B.

Compensation Table under the 2009 rule, with the values originally reported in the previous year's proxy filing. To measure the overall magnitude of pay restatement, we sum the differences between the restated equity pay values (GDFVs) and the originally reported ASC 718 expense values for the prior years covered by the restatement. We then scale the total dollar difference by lagged book assets to account for differences in firm size. In addition to this continuous variable that captures the magnitude of pay restatements, we construct two indicator variables, "Significant Restate Up" (SR_Up) and "Significant Restate Down" (SR_Down), identifying firms in the top and bottom terciles of scaled restatement values, respectively. CEO pay restatements exhibit large cross-sectional variation and are economically sizable. The mean difference between restated and previously reported CEO pay is $743,995, with a standard deviation of $3.17 million. On average, firms in the SR_Up group restate prior two-year CEO pay upward by $2.48 million, while those in the SR_Down group restate pay downward by $1.41 million.

To examine whether the pay restatements motivate real changes in compensation policies, we regress CEO total pay granted in the restatement year on the pay restatement variables. We find strong evidence that past pay restatements are negatively associated with the size of new compensation packages in the restatement year. A one standard deviation increase in the pay restatement metric corresponds to an 11.8% reduction in CEO pay in the restatement year. Compared with firms with minimal restatement, CEOs in the SR_Up (SR_Down) group experience an average pay cut (raise) of $490,000 ($482,000). The pattern is consistent with our hypothesis that firms adjust CEO pay in response to pay restatements.

We conduct various analyses to address alternative explanations and potential omitted variables. Firm performance could affect the probability of payout from performance-based equity grants and subsequently influence their reported ASC 718 expense value. If past firm performance also shapes future compensation design, this could create a spurious relation between pay restatements and contemporaneous pay adjustments in the restatement year. To address this concern, all our regression analyses control for firms' current and past accounting and stock performances. In addition, we split the sample based on firms' performance one year before or during the restatement year. The relation between pay restatements and CEO pay adjustments in restatement year holds in both subsamples of firms regardless of performance.

These findings do not suggest that firm performance is driving our results. We further confirm that our results are not driven by non-overlapping multi-year equity grants, which could mechanically create fluctuations in the value of equity compensation. Our findings similarly hold for other non-CEO executives.

To establish causality, we conduct a difference-in-differences (DiD) analysis that exploits the staggered adoption of the 2009 SEC rule. Firms with fiscal years ending on or after December 20, 2009 are required to restate executive pay in fiscal year 2009, whereas firms with earlier fiscal-year ends restate in fiscal year 2010 (see Figure 1 for an illustration). Thus, whether a firm restates past CEO pay in 2009 fiscal year or not is mainly determined by the firm's pre-existing fiscal year end, an attribute that is credibly exogenous to the firm's compensation policy. We compare the effect of CEO pay restatement on pay adjustments between firms that restate in 2009 due to their fiscal year ends and those that do not. Our main findings remain robust in this setting, which supports the causal influence of rule-induced pay restatements on compensation adjustments.

To further explore the mechanisms through which pay restatement influences CEO compensation, we examine cross-sectional variations in firms' pay adjustments. Firms with higher-paid CEOs are likely already under greater pressure to justify the pay levels and therefore more sensitive to signals that may draw attention to high pay. Thus, these firms should be more inclined to reduce compensation when restatements make their past pay levels appear even higher. We find evidence consistent with this expectation. We further examine the influence of institutional block ownership, given prior evidence that institutional blockholders play an important monitoring role in executive compensation (Bertrand and Mullainathan, 2000; Holderness, 2003). We find that firms with higher institutional blockholder ownership grant smaller pay raises to CEOs when past pay levels are significantly restated downward. In contrast, board independence and CEO duality do not significantly influence how firms adjust CEO pay, which is inconsistent with a pure agency-based explanation. Given recent survey evidence that directors aim to steer clear of public controversy when designing executive pay (Edmans, Gosling, and Jenter, 2023), our evidence suggests that both CEOs and boards are aligned in their objective of avoiding public scrutiny and shareholder antagonism.

Our findings support that firms adjust CEO compensation in response to rule-induced pay

restatements. This naturally leads to the next question: Are these pay adjustments permanent, or do firms reverse the changes once the restatements become less visible in subsequent proxy filings? Examining CEO compensation after the restatement year, we find evidence of an asymmetric pay reversal. For firms that cut CEO pay in restatement year (the SR_Up group), CEOs receive significant pay raise, $271,000 on average (about 55% of the original pay cut), in the year after. In stark contrast, for firms that raised CEO pay (the SR_Down group), we find no evidence of reversal in following years. This pattern points to greater persistence in pay raises than in pay cuts after restatements.

Our paper contributes to the literature in several ways. First, we add to the literature on the economics of disclosure regulations. In their review, Leuz and Wysocky (2016) call for more research into the intended and unintended consequences of disclosure mandates on corporate behavior. While the SEC stated the 2009 rule was not intended to affect firms' compensation policies, it speculated that the change might induce some firms to adjust CEO pay value. We provide the first empirical evidence on this question, revealing that the rule's impact was more widespread and substantial than regulators anticipated. Firms with significant upward or downward restatements of past CEO pay, each representing one-third of firms with restatements, adjust CEO compensation by about half a million dollars, on average, in the restatement year. Moreover, the asymmetric subsequent reversal of these adjustments raises the concern that such responses may be opportunistic, maintained when favorable to the CEO but undone when unfavorable. Overall, our results provide important feedback to regulators about the powerful unintended effects that disclosure rules can elicit.

Second, we add to the growing literature on disclosure requirements and compensation design. This body of work has concentrated on regulatory changes that either alter the content of disclosed information or impose direct economic consequences on firms. Examples include the adoption of FAS 123R that affects accounting expensing of equity-based incentives, the introduction of the Compensation Discussion and Analysis that expands disclosure on executive pay, the mandate on disclosing compensation peer groups, the removal of accounting expense disclosure of equity pay, or the mandate to disclose CEO-to-employee pay ratio (Carter, Lynch, and Tuna, 2007; Faulkender and Yang, 2013; Cadman, Carrizosa, and Peng, 2020;

Gipper, 2021; Chang, Dambra, Schonberger, and Suk, 2023; among others). Our paper differs from these studies by focusing on restatements that change the visibility and prominence of existing compensation disclosures, rather than expanding the underlying information available to investors. We find strong evidence that restating the headline pay figure prompts firms to make significant adjustments to compensation levels.

Our paper is also closely related to the literature on how the presentation of accounting information influences how users process disclosures. Due to limited attention, investors cannot fully process publicly disclosed information. Thus, where and how accounting numbers are presented affects how investors process and respond to the information (e.g., Hirshleifer and Teoh, 2003; Cohen and Lou, 2012; Bartov and Mohanram, 2014; Mohanram, Sun, Xin and Zhu, 2025; among others). While previous studies examine the presentation of accounting items in core financial statements, our paper focuses on a disclosure mandate that changes how compensation information is presented in proxy filings.

Lastly, our findings offer a new perspective on the role of public perception in shaping executive compensation. Existing studies focus on *ex-post* pay adjustments following negative press and find mixed evidence. Core, Guay and Larcker (2008) find no evidence that firms reduce CEO total pay after receiving negative press coverage, while Kuhnen and Niessen (2012) find that firms do not reduce pay size but instead replace option grants with less contentious forms of pay. Our paper shifts the focus from firms' reactive behavior to their anticipatory responses. We show that firms may take preemptive measures *before* public sentiment crystallizes. Consequently, studies that focus on post-event reactions may underestimate the influence of public sentiment. Our findings corroborate recent survey evidence that most directors are willing to revise executive compensation to avoid potential public backlash (Edmans et al., 2023).

2. Rule Background

The SEC views the Summary Compensation Table in proxy filings as "the principal disclosure vehicle regarding executive compensation" (SEC Final Rule 33-8732A, page 48).[6] In the table, firms are

[6] https://www.sec.gov/files/rules/final/2006/33-8732a.pdf

required to present the total value and the detailed components of each executive's annual compensation for the most recent fiscal year and the two preceding years to facilitate year-to-year comparisons. A few exceptions to this three-year reporting requirement apply to companies that are designated as "Smaller Reporting Company", have recently gone public, have undergone a recent significant corporate restructuring, or have executives who recently joined the firm.

Between 2006 and 2009, firms report executive compensation in the Summary Compensation Table in accordance with FASB ASC Topic 718 (previously known as FAS 123R). Under this standard, the value of equity-based compensation (stock and option awards) is reported as the accounting expense values that the firm recognizes for financial statement purposes during the year. These values are included as part of executives' total compensation values in the Summary Compensation Table. In the same proxy statement, but in a different table titled Grants of Plan-Based Awards, firms also report the Grant Date Fair Values (GDFVs) of stock and option grants for each executive for the most recent fiscal year.

Effective December 20, 2009, the SEC's Proxy Disclosure Enhancements rule mandates that firms report the GDFVs of current-year stock and option grants in the Summary Compensation Table. The rule also requires that firms restate executive pay for the preceding years using the new GDFV-based pay values. As a result, CEOs' total pay for 2007 and 2008 may appear substantially different from previously reported amounts, even though the actual compensation awarded in those years remains unchanged.

The rule change could result in either an upward or downward restatement of an executive's previously reported pay. Several factors may influence restatement values, including the vesting period and schedule of past equity grants, the frequency of equity awards, the type of performance measures (such as market conditions, internal performance metrics, or service-based requirements), and the firm's likelihood of meeting those conditions. However, it is important to note that each of these factors can generate either upward or downward restatements, depending on firm- and grant-specific circumstances (see Appendix B for details). Consequently, we do not expect these factors to introduce a systematic bias in the direction or size of restatement. We recognize that the 2009 Proxy Disclosure Enhancements rule implemented other disclosure rule changes such as leadership structure, compensation consultants, and director compensation.

However, none of these changes should trigger significant restatements of prior years' compensation. We later confirm this empirically, showing that restatements for other non-equity pay components are extremely rare around the rule's adoption.

3. Sample and Key Variable Construction

3.1 Sample

Because standard compensation databases (e.g. ExecuComp, Equilar, ISS Incentive Lab) overwrite originally reported compensation values with restated amounts, we manually retrieve the original values from firms' proxy statements to estimate pay restatements. We start with all U.S. public firms in the Compustat fundamental annual database with proxy filings in fiscal years 2009 and 2010. We exclude firms with a fiscal year-end stock price below $1 per share due to delisting risk. To measure pay restatement values, we require firms to have complete pay information for both the pre-restatement and restatement years for the same CEO. Firms should also have valid accounting and stock-related data from Compustat and CRSP datasets for regression analysis. Our final sample contains 2,758 unique firms.[7] Additional executive characteristics are obtained from ExecuComp and ISS Directors datasets, and institutional ownership data are from CDA Spectrum.

From firms' 2009 and 2010 proxy statements, we collect (i) executives' names, positions, and detailed pay information for the fiscal year of the proxy statement from the Summary Compensation Table, and (ii) the *restated* pay details for preceding fiscal years covered in the same Summary Compensation Table. Next, we collect the *originally* reported pre-restatement pay information from the Summary Compensation Tables in the 2007 or 2008 proxy statements, which were filed before the rule change.

Panel A of Table 1 presents our sample composition. Among the 2,758 firms with 2009 or 2010 proxy filings, 2,255 (81.8%) restate their CEOs' past pay in proxy statements, with 1,866 firms doing so in fiscal year 2009 and 389 in 2010. The remaining 503 firms do not restate past CEO pay in both years, and

[7] Our sample covers a larger set of public firms than the Execucomp and ISS Incentive Lab databases. Execucomp includes S&P1500 firms and the ISS Incentive Lab data covers the largest 750 firms in Compustat each year with forward and backward fills.

we identify two distinct reasons. First, 299 firms are not affected by the rule as they do not grant CEOs equity-based pay during the pre-rule change period. Second, for the remaining 204 firms, the new rule may result in no change in reported equity pay value. For example, some equity awards with short-term vesting periods of one year or less can have the same GDFV as its accounting expense value. In such cases, the GDFV of equity awards stay the same as previously reported.

Figure 2 presents the percentage of firms with pay restatements across the Fama–French 12 industries.[8] In all industries, more than 70% of firms have restated their CEOs' past compensation, suggesting that pay restatements are common and are not concentrated in any particular industry.

3.2 Construction of pay restatement variables

Because the 2009 SEC rule only affects the reporting of equity awards, we measure pay restatements using the difference between restated and originally reported equity values. For each preceding fiscal year, we calculate the change in equity-based pay (stock and option awards) as the restated amount reported in the Summary Compensation Table after the rule change minus the originally reported amount before the change. We then sum up the changes across the two prior years to capture the overall magnitude of the rule-induced pay restatement.[9] Our results are robust when we use changes in total pay to measure the magnitudes of compensation restatements. The differences between restated and original total pay values are 99% correlated with the differences in equity values, suggesting that restatements in other pay components are rare in our sample.

Our first measure is *PayRestatement*, a continuous variable that equals the aggregated amount of equity pay restatements scaled by the firm book assets in the year prior to the restatement. Scaling by book assets ensures cross-sectional comparability across firms of different sizes. Compared with compensation-

[8] Industry classifications are obtained from Professor Kenneth French's online data library.
[9] About 86.80% of our sample firms report executive pay from two preceding years in the Summary Compensation Table. For the remaining13.20% of firms that only report executive pay from one preceding years, the pay restatement value is estimated using only one year data. Our results are robust if we use the average annual pay restatement for firms with data for two preceding years.

related scalars, pre-rule book assets are less likely to be correlated with future pay changes.[10] Because the value of book assets is substantially larger than the CEO pay restatement amounts, we present *PayRestatement* as a percentage.

We further divide the sample into terciles based on the value of *PayRestatement*. We use a binary variable *SR_Up* (*SR_Down*) to indicate if a firm has *PayRestatement* in the top (bottom) tercile of our sample. Firms in the *SR_Up* group on average restate previous years' CEO pay upward by $2,478,670, while those in the *SR_Down* group restate pay downward by $1,411,975. The middle tercile consists of firms with minimum or no pay restatements. Our findings remain robust when we redefine *SR_Up* and *SR_Down* using quartiles instead of terciles.

3.3 Descriptive statistics of pay restatement

Table 1 Panel B presents descriptive statistics on pay restatements for the 2,255 firms that restate their CEOs' past compensation. In addition to equity-based compensation, we include statistics for other non-equity components, such as salary, short-term cash incentives, and long-term cash incentives, to present a comprehensive view of CEO pay. The mean of the aggregated restatement value of equity pay is $743,955, which is economically large and represents 24.1% of the average CEO's total pay in our sample. The data also reveal significant cross-sectional dispersion in pay restatements, ranging from -1.22 million at the 10th percentile to 3.54 million at the 90th percentile. After being scaled by the firm's book assets from the pre-restatement year, our main variable, *PayRestatement*, has a mean of 0.111%.

All other compensation components exhibit little to no restatement, confirming that executive pay restatements are driven primarily by changes in equity award reporting standards. This stark contrast between the restatements of equity-based compensation and other components suggests that there is unlikely to be any other confounding event or disclosure that could have contributed to the observed

[10] As robustness checks, we use CEO salary or CEO total pay in the pre-restatement year as alternative scalers and obtain qualitatively similar results.

compensation restatements.

4. Pay Restatement and Changes in Executive Compensation

4.1 Multivariate analysis of pay restatement and CEO compensation

4.1.1 Model specification

We use the following model to examine the relation between CEO pay restatement and CEO total pay granted in the restatement year:

$$Pay\ Variable_{it} = \alpha_{it} + \beta \cdot Pay\ Restatement\ Variable_{it} + Pay\ Variable_{it-1} + \gamma \cdot X_{it} + \gamma \cdot X_{it-1} + \varepsilon_{it}\ , \qquad (1)$$

where $Pay\ Variable_{it}$ in the baseline is CEO total pay, estimated as the natural logarithm of the total compensation, for CEO i in year t. $Pay\ Restatement\ Variable_{it}$ is either the continuous variable, *PayRestatement*, or the two indicator variables, *SR_UP* and *SR_Down,* for CEO i in year t. We include lagged CEO total pay to control for potential momentum or reversal in compensation policy. By including the lagged value of the dependent variable as a control, our model effectively captures the change in total pay from the prior year. For completeness, we also use the year-over-year change in CEO total pay as an alternative dependent variable to directly examine the relation between pay restatements and changes in executive compensation. We report statistical significance of the estimated coefficients using robust standard errors clustered at the firm level.

X is a vector of control variables that are often included in executive compensation studies. To control for the difference in pay-for-performance sensitivity across firms, we include various measures of firm performance: accounting performance (ROA), stock performance (cumulative stock return during the first year), and sales growth. We further control for lagged performance variables to mitigate the concern that past firm performance could influence the expensed value of CEO equity pay. We use the natural logarithm value of firm's total assets to control for firm size, the standard deviation of daily stock returns during the fiscal year to control for firm risk, and the Tobin's q to proxy for growth opportunities. We include firm characteristics in both restatement year t and year $t-1$ to control for the possibility that CEO pay may depend on both concurrent and lagged firm characteristics. We also include the percentage of

shares owned by intuitional blockholders with at least 5% ownership (*BlockInstlOwn%*) in year *t* to control for shareholder governance (e.g., Edmans, 2014; Edmans and Holderness, 2017).

Table 2 Panel A presents the summary statistics for the regression variables. All our regression models include industry fixed effects (based on the Fama–French 48-industry classification) to account for possible cross-industry differences in pay design. The regression sample includes firm-year observations from 2,758 unique firms in fiscal years 2009 and 2010, as discussed in Section 3.1. Because a firm that restates in 2009 could continue adjusting CEO pay in 2010, we exclude the 2010 observation for all firms that restated in 2009 to ensure a clean comparison and to isolate the rule's initial impact. This results in a panel of 3,485 firm-year observations for the regression analysis. We include a year indicator for 2009 to control for any market-wide trends during the two-year period.

Panel B of Table 2 presents the correlation matrix to explore the link between pay restatements and firm characteristics. The relationship between pay restatements and lagged firm performance is mixed: *PayRestatement* is negatively correlated with pre-restatement ROA and stock returns but positively correlated with sales growth and Tobin's Q. These coefficients are all statistically significant but have magnitudes below 0.1, except for Tobin's Q. Similarly, higher ROA is associated with a lower likelihood of significant downward pay restatement, while better stock performance is associated with lower likelihood of significant upward restatement. *PayRestatement* is not correlated with firm size but is significantly positively correlated with firms' stock volatility. The correlations between the pay restatement variables and firm characteristics range from -0.063 to 0.195, with the majority between -0.1 and 0.1. The relatively low correlation coefficients indicate that multicollinearity is unlikely to be a concern in our regression analysis.

4.1.2 Baseline regression results

We present the regression estimations for Equation (1) in Table 3. The dependent variable in columns (1) and (2) is the natural logarithm of CEO total pay in the restatement year. The independent variables of interest are *PayRestatement* in column (1) and the two indicator variables (*SR_Up* and

SR_Down) in column (2). The coefficient of *PayRestatement* is negative and significant at the 1% level, suggesting that the magnitude of pay restatement is negatively associated with CEO total pay in the restatement year. Consistent with this finding, column (2) shows that the coefficient of *SR_Up* is negative and significant while the coefficient of *SR_Down* is positive and significant. Firms that significantly restate the prior CEO pay upward (downward) will grant lower (higher) total pay to CEOs in the restatement year. The relation between pay restatement and subsequent CEO pay is economically significant as well. For example, on average, CEOs in the *SR_UP* (*SR_Down*) group receive total pay that is approximately 15.1% lower (13.2% higher) than firms in the control group, which have no or only small restatements. These differences translate into an average pay cut of $464,629 for the *SR_UP* group and a pay increase of $406,166 for the *SR_Down* group, based on the mean CEO total pay in our sample.

Columns (3) and (4) present regression results based on the year-over-year changes in CEO total pay in the restatement year. The coefficients on *PayRestatement* and indicator variables (*SR_Up* and *SR_Down*) confirm that CEOs take a significant pay cut if their previous years' compensation values are restated upward, while receiving a pay raise when their previously reported pay values are restated downward. Specifically, CEOs in the *SR_UP* (*SR_Down*) group on average experience a $490,000 pay cut ($482,000 pay raise) in the restatement year. Overall, the results confirm our hypothesis that firms respond to the restated pay values presented in the Summary Compensation Table, leading to real adjustments in executive pay.

4.1.3 Firm performance and the relation between CEO pay adjustments and pay restatements

Prior to the 2009 rule change, firms report the ASC 718 accounting expense value of equity grants in the Summary Compensation Table. For equity grants with internal performance conditions (e.g. accounting-based metrics), the ASC 718 expense recorded each year was affected by the firm's assessed likelihood of achieving those performance targets. The rule change therefore raises the potential concern that restatements of past pay could be correlated with firms' performance in prior years. For example, under the old rule, a firm could reverse previously reported equity grant value or even record negative values for

performance-based equity grants following a year of bad performance, as the likelihood of executives receiving a payout decreases. The 2009 rule eliminates such reversals, potentially causing firms with poor past performance restate prior year executive pay upward. If poorly performing firms are also more likely to cut future CEO pay, then the observed negative relation between pay restatement and CEO compensation may be driven by poor past performance rather than the restatements themselves. However, the correlations presented in Table 2 Panel B do not fully support this explanation, as *SR_UP* shows no significant correlation with past ROA and *SR_Down* shows no significant correlation with past stock return. Nonetheless, to mitigate the influence of past performance, we control for both lagged and concurrent firm performance in all our regressions.

To more directly address the concern that firm performance might drive our findings, we partition firms into subgroups based on their performances in the pre-restatement year. Table 4 presents regression results for these subsamples. In Panel A, we split the sample into two groups based on whether firms' total stock return (TSR) in the pre-restatement fiscal year is above or below the sample median. Our baseline findings in Table 3 remain robust in both high and low performance subgroups. A similar pattern is observed in Panel B when we split firms into two performance groups based on whether the firm's ROA before restatement year is above or below the sample median.

In untabulated tests, we further separate our sample into subgroups based on firms' stock returns or ROAs during the restatement year. Our results remain robust in each subgroup. Collectively, the findings do not suggest that our findings are driven by past or current firm performance.

4.2 Non-overlapping equity grants

A potential concern is that our results may be mechanically driven by some firms' practice of granting long-term equity awards on a non-overlapping basis. That is, firms grant multi-year awards in one year and wait until prior grants expire before issuing new ones. These grant patterns mechanically create fluctuations in reported equity and total pay values, which may partially drive the observed correlation between pay adjustment and pay restatements. Although prior literature suggests that the non-overlapping

grant style is uncommon, we conduct robustness tests to ensure that our findings are not driven by this mechanical artifact.[11]

To identify firms that grant equity awards on a non-overlapping basis, we require detailed vesting schedules of all equity grants awarded to the CEOs in the pre-restatement years. We rely on ISS Incentive Lab for such data, which limits the analysis to 34.3% of our sample firms that are covered by the database. As the vast majority of long-term grants have a three-year vesting schedule, we exclude firms that make only one long-term equity grant during the three-year period preceding the restatement year.[12] We re-run the baseline regressions in this subsample and present the findings in Table 5. Despite the much smaller sample size, the coefficients of all key variables, *PayRestatement, SR_UP*, and *SR_Down*, remain significant and consistent with earlier findings. For example, coefficients in Column (4) suggest that even after excluding firms with overlapping equity grants, CEOs in the *SR_UP* (*SR_Down*) group on average experience a $611,000 pay cut ($558,000 pay raise) in the restatement year.

4.3 Additional governance controls

Executive compensation is a bargaining outcome between the board and the CEO (Hermalin and Weisbach, 1998), which suggests that CEO power and board independence may influence CEO compensation design. We obtain CEO and board characteristics data from Execucomp and the ISS Directors database, respectively, which limits our sample for corporate governance analyses to S&P 1500 firms. To capture CEO power, we use an indicator variable that equals one if the CEO is also the chairman of the board (*CEO Duality*) and zero otherwise. We also include CEO age to control for cross-sectional differences in career concerns. We measure board independence as the ratio of the number of independent directors to the total number of directors on the board. Table 6 presents regression results after including

[11] Most firms grant equity awards on an overlapping basis, that is, issue new grants every year. Compensation consulting firm Pearl Meyer LLC states that "most companies will continue to use annual grants and overlapping performance periods" (Manna from Heaven: The Complexity and Confusion with LTIPs; June 2019). Using a sample of long-term accounting-based awards, Li and Wang (2016) find that 89.46% of the awards are granted on overlapping basis, while only 10.54% are granted on non-overlapping basis.

[12]Meridian Compensation Partners finds 93% of surveyed firms use a three-year performance period (2024 Corporate Governance and Incentive Design Survey; https://corpgov.law.harvard.edu/2024/10/23/2024-corporate-governance-and-incentive-design-survey/).

these additional governance controls. Despite the reduced sample size, the coefficients of the pay restatement variables still have the same sign and similar magnitudes as those reported in Table 3.

4.4 Difference-in-differences analysis

In this section, we exploit the quasi-exogenous timing of the SEC rule's adoption across firms with different fiscal year ends and construct a difference-in-differences (DiD) analysis to establish the causal influence of rule-induced pay restatements on CEO total pay granted in the restatement year. Gipper (2021) and Chang et al. (2023) use a similar identification strategy to establish the influence of disclosure rules on executive compensation.

The rule requires firms with fiscal years ending *on or after* December 20, 2009 to restate previous years' pay in their 2009 proxy filings. Firms with fiscal years ending *before* December 20, 2009 will do so in 2010 proxy statements. Figure 1 illustrates the staggered implementation using one firm with December fiscal year-end and another with October fiscal year-end. Since a firm's fiscal year end is determined well before the 2009 rule change, whether a firm restates past executive pay in the 2009 or 2010 proxy statement is largely exogenous.

The sample for the DiD analysis includes all firm-year observations from fiscal year 2008 (the pre-period) and 2009 (the post-period). The treated group contains the "first batch" of firms that are required to restate their CEOs' pay in 2009 proxy filings due to fiscal year ends falling on or after Dec 20, 2009. We focus on the first batch of restating firms and restrict the sample to fiscal years 2008 and 2009. This approach captures the immediate and exogenous impact of the rule-induced restatement while minimizing long-term confounding effects that may arise from pay adjustments. Including 2010 observations would create overlapping treatment windows and complicate identification, as some firms would already be in the post-restatement period while others remain untreated.

One complexity of our empirical setup is that the predicted CEO pay adjustments depend on the direction of the pay restatement. Thus, we cannot rely solely on a standard DiD (*Treated* × *Post*) term, as it does not carry a clear directional prediction. To address this issue, we implement a difference-in-different

analysis with heterogeneous treatment intensity (e.g., Chodorow-Reich, 2014 and Barrot et al., 2022). Specifically, we include, along with the DiD indicator, an interaction term between the DiD term and the pay restatement variables to capture variation in both the intensity and the direction of the rule's impact across firms. The empirical model is specified as follows:

$$Pay\ Variable_{it} = \alpha_{it} + \beta \cdot Treated_i \times Post_t \times Pay\ Restatement\ Variable_{it} + Treated_i \times Post_t + Post_t + \gamma \cdot X_{it} + \varepsilon_{it}\,, \quad (2)$$

where t is either 2008 or 2009, *Post* is an indicator variable that equals one for observations in 2009 and zero for observations in 2008, and *Treated* equals one for firms with fiscal year ends on or after Dec 20, 2009. As in Equation (1), $Pay\ Restatement\ Variable_i$ is either the continuous variable, *PayRestatement*, or two indicate variables, *SR_Up* and *SR_Down,* for CEO i in fiscal year 2009. The coefficient β captures how CEO pay changes from 2008 to 2009 vary with the magnitude and direction of pay restatements among treated firms, relative to all firm-year observations with no restatement. Because the pay restatement variables are defined only for treated firms in the post-rule period, they are effectively equivalent to the triple-interaction term. We express the specification in the triple-interaction form to make the model structure explicit and facilitate interpretation. [13]

Table 7 presents the regression outcomes of the DiD analysis. The dependent variable is the natural logarithm of CEO total pay in the first two columns and change in CEO pay after restatement in the last two columns. We present only the coefficients of interest variables in Table 7, but all regressions include the same set of controls as in Table 3. In columns (1) and (3), the coefficients of the triple interaction term are negative and significant. In columns (2) and (4), the estimated coefficients corresponding to the pay restatement indicators (*SR_Up* and *SR_Down*) show opposite signs: *SR_UP* is negative and significant and

[13] Because pay restatement variables are defined only for treated firms in the post-rule period, the lower-order terms and pairwise interactions involving *Treated* and pay restatement variables are perfectly collinear and thus omitted. Only the *Post* indicator can be included separately to capture time effects to all firms. Accordingly, we estimate a reduced model that includes the standard DiD term and its interaction with pay restatement variables, with the latter capturing our focus on the heterogeneous effects of the rule, reflecting both its intensity and direction, on CEO pay adjustments.

SR_Down is positive and significant. These findings confirm our expectations that firms adjust CEO pay in the restatement year in accordance with the size and direction of prior pay restatement.

As a further robustness check, we exclude firms that do not restate CEO pay despite having a fiscal year end on or after Dec 20, 2009. These firms may not use equity-based compensation or only offer short-term awards for which the GDFV is expected to align with the accounting expense value. Excluding these firms ensures that the remaining treatment group consists only of firms that are directly affected by the disclosure rule change. Under this restriction, the difference in restatement decisions between the treatment group (firms restate first in 2009) and the control group (firms restate in 2010 due to earlier fiscal year-ends) is entirely driven by pre-determined fiscal year ends. Our results remain robust under this restriction. Together, the results in this section support a causal interpretation of the effect of restating past CEO pay on CEO pay adjustments in the restatement year.

4.5 Timeline of the Proxy Disclosure Enhancements rule

A potential timing concern is that some components of 2009 CEO compensation may have been determined before the new rule was announced. This concern, in fact, would likely bias against us finding significant pay adjustments in restatement year. Further, the debate over whether firms should report the GDFV of equity-based pay in the Summary Compensation Table has been longstanding. The issue gained traction in April 2009 when the press reported that the SEC was considering related rule changes.[14] In response, practitioners began submitting comments to the SEC in May 2009.[15] The SEC formally released its proposed rule (33-9052) on July 10, 2009, and subsequently issued the final rule (33-9089A) on December 16, 2009.[16] Given the timeline, it is reasonable to expect that relevant parties, including compensation committee members, compensation consultants, and top executives, became aware of the impending rule change and anticipated its impact by mid-2009.

While we cannot directly observe when compensation committees respond to the rule change,

[14] SEC Chair Says Regulatory Agency Considering Changes to CEO Pay Disclosure Rules, Associated Press Business Writer, April 30, 2009.
[15] https://www.sec.gov/files/rules/petitions/2009/petn4-585.pdf
[16] https://www.sec.gov/rules-regulations/2009/12/proxy-disclosure-enhancements

research suggests that they can convene quickly and add new agenda items within a week (Hermanson, Tompkins, Veliyath, and Ye, 2012). Even if some compensation plans were approved before the SEC's proposal in July, compensation committees typically retain the discretion to revise executive pay if warranted.[17] Nonetheless, we take extra caution by conducting additional analyses that focus on firms that may have greater flexibility to adjust executive compensation.

To determine whether firms have compensation grants dated before the SEC proposal, we use grant date information from the "Grants of Plan-Based Awards Table", obtained from Incentive Lab or, when unavailable, collected manually from proxy statements. For firms that disclose grant dates in this table, we exclude those with grant dates all fall before July 17, 2009, which is one week after the SEC proposal date.[18] We then re-estimate all baseline regressions and present the results in Table 8. The estimated coefficients of the pay restatement variables remain statistically significant and are larger in magnitude than those reported in Table 3. For instance, the coefficient of *PayRestatement* is -0.330 in column (1), compared with -0.271 in Table 3, a 22% increase. The results confirm our earlier findings and suggest that firms with sufficient time to respond to the rule change implement larger pay adjustments.

4.6 Analysis for non-CEO executives

We next examine whether the findings hold for non-CEO executives. Firms are required to report compensation information for the CEO, the CFO, and other executives who are among the top five highest paid executives of the firm based on total compensation. We conduct the same set of regression analyses for non-CEO executives. We re-estimate the pay restatement variable, *PayRestatement,* using compensation data for all non-CEO executives collected from proxy statements and then reclassify *SR_Up* (*SR_Down*) groups accordingly. Table 9 presents the regression results. With multiple non-CEO executives per firm, the number of executive-year observations in the regressions increases to 10,734.

[17] For example, The Boeing Company states in its 2009 proxy statement that "even when some grants were issued before July, compensation committees typically retain discretion to revise executive compensation if necessary." (https://www.sec.gov/Archives/edgar/data/12927/000119312510056985/ddef14a.htm#toc85238_21)

[18] We take a date that is one week after the proposal date to give firms enough time to respond (as suggested in Hermanson et al., 2012). In untabulated tests, we also exclude firms where the reported grant dates of all awards in the Plan-based Award Table fall on or before April 30, 2009, the first related news date. All our results remain robust.

As shown in Table 9 columns (1) and (3), the coefficients of *PayRestatement* remain negative and significant, confirming that firms on average are more likely to cut non-CEO executives' total pay if they restate the executive's past compensation upward. In columns (2) and (4), the coefficients of *SR_Up* are negative and significant while the coefficients of *SR_Down* are positive and significant, which is again consistent with the findings for the CEOs. On average, non-CEO executives experience smaller pay adjustments than CEOs. Specifically, non-CEO executives in the *SR_UP* (*SR_Down*) group experience 5.5% lower (5.7% higher) pay, as shown in column (2), or a pay cut of $103,000 (a pay raise of $98,000), as shown in column (4), in the restatement year. Together, Table 9 shows that the rule-induced pay restatement also exerts significant impact on the pay of non-CEO executives.

5. Cross-Sectional Analyses

To better understand the cross-sectional variation in firms' responses to past pay restatements, we explore a set of factors that may influence the relation between pay restatements and CEO pay adjustments.

5.1 CEO past pay level

High CEO pay often attracts public scrutiny. Media outlets frequently compile rankings of CEOs based on their reported total pay, highlighting and critiquing those at the top (e.g., The Wall Street Journal, *Time*, *The New York Times*, Bloomberg, and S&P Global News have all published such lists in recent years). Consequently, firms with high prior CEO pay have stronger incentives to act preemptively when the 2009 rule threatens to make an already high compensation figure appear even higher.

To examine this conjecture, we divide our sample into two subsamples based on the median value of CEO total pay originally reported for the pre-restatement year.[19] We present the results in Table 10 Panel A. The dependent variable is the natural logarithm of CEO total pay in columns (1) to (4) and annual changes in CEO total pay in columns (5) to (8). Columns (1) and (2) show that the coefficients of

[19] As a robustness check, we divide the sample based on the tercile or quartile values of CEO total pay originally reported for the pre-statement year and treat CEOs in the top quartile as having high pay. Our results remain qualitatively similar.

PayRestatement are all negative and significant, but the magnitude of the coefficient is much higher and more statistically significant when the prior CEO pay is high. We compare the coefficient between the two subsamples and present the *p*-value of the test near the bottom of the panel. Indeed, the coefficient is significantly more negative (*p*-value=0.00) for the above median pay subsample than for the below median pay ones. This result confirms our conjecture that when the CEO's past pay is relatively high, firms are more likely to proactively cut the CEO's total pay when past CEO pay is restated upward. In columns (3) and (4), the negative coefficient of *SR_Up* is only statistically significant when the prior CEO pay is above the sample median, again confirming that higher-paid CEOs experience a larger pay cut when there is an upward pay restatement. The coefficient of *SR_Down,* however, is consistently positive and significant across both subsamples, indicating that both higher- and lower-paid CEOs are more likely to receive a pay raise if their past pay is restated downward. We repeat the analysis using changes in total pay as the dependent variable in columns (5) – (8) and find similar results.

5.2 Institutional ownership

Many studies show that institutional investors play an important monitoring role in corporate governance (e.g. McCahery, Sautner, and Starks, 2016; Dasgupta, Fos, and Sautner, 2021; Edmans, Gosling, and Jenter, 2023). Thus, firms with higher institutional ownership may be more attentive to how pay restatement could shift investors' perception and take preemptive actions to avoid scrutiny. To examine this conjecture, we divide the sample into subgroups based on the median value of institutional block ownership, *Instl. Block Own*. We focus on blockholders because their large ownership increases their willingness to monitor. The subsample results are presented in Panel B of Table 10.

The coefficient of *PayRestatement* is negative and significant in all models, but is not statistically different between higher-ownership and lower-ownership subsamples. A similar pattern exists for the coefficients of *SR_Up*, all negative and significant with no statistically significant difference between the two subsamples. These results suggest that institutional blockholders do not exert additional influences on firms' pay cut decisions after upward pay restatements. The coefficient of *SR_Down* is positive and

significant in all columns but significantly lower in the higher block ownership subsample than in the lower ownership subsample, which suggests that stronger institutional monitoring can limit CEO pay raises.

5.3 CEO duality and board independence

It is unclear ex ante how a powerful CEO will respond to an upward restatement of their past pay. On the one hand, powerful CEOs may be less concerned about pay restatements since their job security and compensation are relatively protected from negative public perception and associated career risks. On the other hand, powerful CEOs may be more sensitive to restatements as they face greater potential reputation and human capital losses. Thus, the relationship between CEO power and firms' responses to past pay restatements remains an empirical question.

We classify the sample into two subsamples based on whether the CEO is also the chairman of the board. We present the results in these subsamples in Panel C of Table 10. The coefficient of *PayRestatement* is negative in all columns and is not statistically different between CEOs with and without the board chair role. Results are similar with the two pay restatement indicators. The coefficient of SR_Up is negative and the coefficient of SR_Down is positive in all models, with no significant difference in coefficients between CEOs who serve as board chairs and those who do not. These findings suggest that CEO power does not have a significant influence on how firms respond to pay restatement.

Independent boards help mitigate the shareholder-manager conflicts and reduce rent-seeking behaviors (Weisbach, 1988; Yermack, 1996; Vafeas, 2003). However, it remains unclear ex-ante how independent directors respond to CEO pay restatement. While independent directors familiar with compensation design may very well understand that the pay restatement has no material impact on the CEO's past pay packages, they may still be more sensitive to how the pay is perceived by other stakeholders, and adjust the CEO pay accordingly. To shed light on these issues, we split our sample into two subgroups based on the median value of board independence and repeat our baseline regression in these two subsamples, respectively. Panel D of Table 10 presents the results. All three pay restatement variables remain robust in both subsamples, with no statistically significant differences in coefficients between the

high and low board independence groups.

In summary, prior CEO pay level appears to have the strongest influence on the relation between CEO pay adjustments and past pay restatements. Institutional block ownership does not appear to matter for CEO pay cuts, but limits pay raises. Board independence and CEO duality exert minimum influence on how firms adjust their CEO pay based on pay restatements.

6. Pay Restatement and Future CEO Compensation

The empirical findings so far suggest that firms adjust CEO pay in the year they disclose pay restatements. However, it remains unclear whether these adjustments are permanent or if firms reverse them once the restatements become less visible. To address this question, we examine CEO compensation in the one or two years following the restatement year.

The results are presented in Table 11. The first four columns present results with the natural logarithm of CEO total pay one or two years after the restatement year as the dependent variable, while the next four columns with the annual change in total pay. For CEO total pay in the years following the restatement, the coefficients of *PayRestatement* in columns (1), (3), (5), and (7) are all insignificant. The findings suggest that on average, there is no reversal of pay policy over the next two years after firms adjust CEO pay in response to pay restatement. However, the coefficient of *SR_Up* in columns (2) and (6) are positive and significant. This result suggests that CEOs who experience a pay cut during the restatement year will receive a pay increase one year later, which partially reverses the initial adjustment. Results from column (4) of Table 3 show that CEOs in the *SR_UP* group experience an average pay cut of $490,000 in the restatement year. Column (6) of Table 11 reveals that these CEOs receive an average pay increase of $271,000 one year later, representing a 55% reversal of the initial reduction. This reversal does not extend into the following year (i.e., two years after the restatement), as the coefficients on the pay restatement variables in columns (4) and (8) are either marginally significant or insignificant. The coefficient on SR_Down remains insignificant across all columns, suggesting that firms that increase CEO pay in the restatement year do not reverse those raises in the subsequent two years.

Overall, the evidence suggests that when a CEO's past pay is restated upward, they experience a temporary pay cut, which is partially reversed in the following year. In contrast, when a CEO's past pay is restated downward, they receive a permanent pay increase that is not reversed in subsequent years.

7. Conclusion

Our paper examines the impact of the 2009 Proxy Disclosure Enhancements rule on executive compensation policies. We find that more than 80% of firms restate their CEOs' past compensation under the rule and that these restatements lead to corresponding adjustments in CEO pay during the year of disclosure. Specifically, when restated past pay values exceed previously reported amounts, firms reduce CEOs' total compensation. Conversely, when past pay is restated downward, firms are more likely to increase CEO total compensation. Our findings suggest that while the SEC rule mainly changes the presentation of executive compensation, it can trigger real actions that exceed the SEC's initial expectations.

Cross-sectional analyses further reveal that these pay adjustments vary systematically across firms. Higher-paid CEOs are more likely to experience larger pay cuts than lower-paid CEOs following upward restatements, while firms with higher institutional block ownership grant smaller pay increases after downward restatements. CEO power and board independence do not appear to influence the relations between pay adjustments and pay restatements, which suggests that CEOs and boards are generally aligned when responding to restated pay amounts. We also find that as the rule-induced pay restatements become less visible in subsequent years, firms partially reverse the pay cuts made during the restatement year, but do not reverse pay raises.

Taken together, our findings suggest that firms are attentive to how compensation information is presented and interpreted by stakeholders. Disclosure regulations that mainly alter the presentation of existing information can induce real changes in pay decisions and create incentives for short-term or opportunistic responses. Our paper underscores the importance of considering the unintended consequences of disclosure mandates and calls for further research on how disclosure rule changes may shape contractual and real economic decisions more generally.

Appendix A. An example of executive compensation restatement under the Proxy Disclosure Enhancements rule

We use the compensation disclosure of Daniel J. Starks, the CEO of St Jude Medical, Inc., to illustrate how firms restate past executive compensation under the 2009 Proxy Disclosure Enhancement rule.

In the proxy statement for the fiscal year 2008, Mr. Starks' compensation for 2007 and 2008 is presented in the Summary Compensation Table as follows.[20]

Name	Year	Salary	Stock Awards	Option Awards	Non-Equity Incentive Plan Compensation	All other Comp.	Total
Starks	2008	993,750	0	1,866,669	1,365,413	65,400	4,291,232
	2007	975,000	0	1,731,315	1,205,100	88,375	4,025,790

In the footnote (2) under the 2008 Summary Compensation Table, the firm states that the reported option values are calculated "based on FAS 123(R) and equal the financial statement compensation cost for stock option awards as recognized in our consolidated statement of earnings for each fiscal year".

In the proxy statement for fiscal year 2009, St Jude Medical restates Mr. Starks' 2008 and 2007 compensation as follows.[21]

Name	Year	Salary	Stock Awards	Option Awards	Non-Equity Incentive Plan Compensation	All other Comp.	Total
Starks	2009	975,000	0	5,865,795	1,061,775	36,350	7,938,920
	2008	993,750	0	6,424,380	1,365,413	65,400	8,848,943
	2007	975,000	0	4,568,352	1,205,100	88,375	6,836,827

As shown in the tables above, Mr. Starks' 2007 and 2008 option awards values are revised upward based on their grant date fair values (GDFV). The restated option values, $6,424,380 and $4,568,352, can be found in the Grants of Plan-Based Awards Table in 2007 and 2008 proxy statements, respectively. In total, the value of Mr. Starks' 2007 and 2008 equity compensation is revised up by $7,394,748.

[20] 2008 proxy: www.sec.gov/Archives/edgar/data/203077/000089710109000590/0000897101-09-000590-index.htm
[21] 2009 proxy: www.sec.gov/Archives/edgar/data/203077/000089710110000608/stjude101262s1_def14a.htm

Appendix B. Rule changes for the Summary Compensation Table

Starting from 2006, under FASB ASC Topic 718 (referred to as the "*Old Rule"* hereafter), the SEC required firms to report, in the Summary Compensation Table of annual proxy statements, the values of stock and option awards to executives as the accounting expense value recognized for financial statement purposes during the year.[22] Accordingly, the total compensation value reported in the Summary Compensation Table was based on the accounting expense value of equity awards.

In 2009, the SEC adopted the Proxy Disclosure Enhancements rule, which became effective for fiscal years ending on or after December 20, 2009 (referred to as the "*New Rule"* hereafter). The "*New Rule"* requires firms to report the grant date fair values (GDFVs) of executives' stock and option grants granted in the fiscal year in the Summary Compensation Table, replacing the previously mandated accounting expense values. Additionally, in the same table, firms are required to follow the "*New Rule*" to restate the stock and option grant values as well as total compensation for the preceding years. As a result, many firms significantly restated their previously reported executive pay amounts in the Summary Compensation Table.

Several factors could influence how reported values of stock and option grants could differ between the new and old rules. Below we discuss a *non-exhaustive* list of situations where the "*New Rule"* would result in firms restating the values of executives' equity awards in the Summary Compensation Table.

First, for stock or option grants with a multi-year vesting period, under the "*Old Rule"*, firms usually expense the GDFVs of these grants across the vesting period. Under the "*New Rule"*, firms only need to report the GDFVs of new equity grants during the fiscal year in the Summary Compensation Table. For example, firm A grants its CEO new overlapping three-year stock awards annually in 2006, 2007, and 2008. From the Summary Compensation Table in firm A's 2008 proxy filing, the reported value of the CEO's stock award is calculated as one third of her 2006 stock award GDFV, one third of her 2007 stock award GDFV, and one third of her 2008 stock award GDFV.[23] In firm A's 2009 proxy filing, following the "*New Rule"*, the CEO's 2008 stock award value will be restated as 100% of her 2008 stock award GDFV in the Summary Compensation Table. Her 2008 total pay will be restated accordingly. Whether a firm restates its CEO's 2008 pay upward or downward depends on the relative size of her stock awards in the current year and previous years and their specific vesting schedule.

Second, under the "*Old Rule"*, stock or option grants with service conditions can be reported over multiple years, even in the absence of new grants during that time. This is because the executive was considered to have rendered partial service in exchange for the award, even if the full-service term had not yet been completed. In contrast, the "*New Rule"* requires firms to report the GDFVs of equity awards entirely in the year they are granted. As a result, firms may restate past executive pay upward or downward, depending on the number and duration of prior outstanding service awards and how they were expensed in earlier years.

Third, performance conditions attached to equity awards could also result in restatements of equity grant values. Under the "*Old Rule"*, firms may report negative equity value in Summary Compensation Table. This occurs when the value of forfeited awards in a given year (e.g. due to not meeting performance conditions) exceeds the value of new grants recognized that year. For example, suppose Firm A granted its CEO a three-year accounting performance-based stock award in 2007 and made no new long-term equity grant in 2008. In the 2007 proxy statement, Firm A reported 33% of the grant's GDFV in the Summary Compensation Table, consistent with the Old Rule's expense recognition. However, in 2008, it became

[22] FASB ASC Topic 718 is previously known as the Financial Accounting Standard 123R (FAS 123R).

[23] For equity grants that vest entirely on a single vesting date (cliff-vesting), firms allocate the grant value on straight-line bases. For equity grants that vest in tranches (graded-vesting), firms may allocate different amount each year based on the vesting schedule. For example, for a stock award with a grant date fair value of $1,000 and vests half each year, the company expenses $750 in year one ($500 + $500*0.5) and $250 in year two.

clear that the performance conditions would not be met, and the grant would be forfeited. As a result, in the 2008 proxy statement, the firm reported -33% of the 2007 grant's GDFV in the Summary Compensation Table to reverse the compensation expense previously recognized in 2007.[24] Under the "*New Rule"*, however, the full GDFV would have been reported in 2007, the year of the grant. Accordingly, Firm A would restate 2008 CEO pay upward, since the -33% reversal would no longer appear. Alternatively, if Firm A would meet the performance conditions, it would recognize another 33% of the 2007 grant's GDFV in the 2008 proxy statement under the "*Old Rule*". Under the "*New Rule*", however, Firm A would restate 2008 CEO total pay downward to remove the 33% allocation, since the full GDFV of the 2007 grant would have already been reported in 2007.

In sum, how firms restate past executive pay value is influenced by many factors. The vesting periods of past equity grants, the vesting schedules of the grants, the timing of the grants, the underlying performance measures (e.g. market conditions, internal performance measures, or service-based conditions), and the likelihood of the firm meeting performance requirements can all lead to differences between the accounting expense value and the GDFVs of equity compensation.

[24] For equity awards with "market conditions" (e.g. stock price related performance hurdles), firms are not allowed to reverse compensation expense once it is recognized.

Appendix C. Variable definitions

Variable	Definition	Source
PayRestatement	The sum of equity pay restatements from preceding years covered in the Summary Compensation Table, scaled by total assets in the year prior to the restatement year, expressed in percentage points. The equity restatement for a given year is calculated as the restated value of equity awards for that year minus the originally reported value.	Proxy statement
SR_Up	Indicator equals one if a firm's *PayRestatement* value is in the top tercile of our sample; zero otherwise.	Proxy statement
SR_Down	Indicator equals one if a firm's *PayRestatement* value is in the bottom tercile of our sample; zero otherwise.	Proxy statement
Ln(Total pay)	The natural logarithm of total CEO pay in the fiscal year as reported in Summary Compensation Table.	Proxy statement
ΔTotal Pay	The total CEO pay in the restatement year minus the total CEO pay in the prior year. Both pays are collected from the Summary Compensation Table disclosed in the restatement year. Value in $MM.	Proxy statement
Equity pay	The sum of values of the stock awards and option awards in the Summary Compensation Table	Proxy statement
Salary	Amount shown in the salary column in the Summary Compensation Table	Proxy statement
Short-term cash incentives	The sum of bonus and non-equity annual incentives in the year	Proxy statement
Long-term cash incentives	The sum of non-equity long-term incentives in the year	Proxy statement
Firm size	The natural logarithm value of book assets	Compustat
ROA	The ratio of operating income before interest, depreciation and tax to total assets	Compustat
Sale growth	The ratio of total revenue over the fiscal year to total revenue over the last fiscal year minus one	Compustat
Stock volatility	The annualized standard deviation of daily stock returns over the fiscal year. We require a firm-year to have at least 120 days to calculate the stock volatility.	Compustat
Tobin's q	The ratio of the market value of assets to the book value of assets. The market value of assets equals the book value of assets minus the book value of equity (sum (seq, txdb, itcb,-pstkrv)) plus the market value of equity (prcc_f ×csho)	Compustat
TSR	The cumulative buy-and-hold monthly stock returns over the fiscal year	Compustat
Instl.BlockOwn	The ratio of the sum of all institutional blockholders' (ownership≥5%) shares to total number of shares outstanding	Thomson Financial 13F
CEO duality	Indicator equals one if the CEO is also the chairman of the board, and zero otherwise	Execucomp
CEO age	The age of CEO at the end of fiscal year	Execucomp
Independent director ratio	The ratio of the number of independent board directors to the total number of board directors	ISS Directors

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Figure 1. Examples of different time windows to adopt the Proxy Disclosure Enhancements Rule

This figure shows the time windows for two firms with different fiscal year-end dates to adopt the 2009 rule. One firm has December 31 as the fiscal year end date (we name it firm D), and the other has October 31 as the fiscal year end date (we name it firm O). The 2009 rule becomes effective for fiscal years ending on or after December 20, 2009. The introduction date, December 20, 2009, leads Firm D to adopt the new disclosure in its 2009 fiscal year with the corresponding proxy statement filed in March 2010 (denoted as 2009 proxy in the figure), while Firm O waits to adopt the new disclosure in its 2010 fiscal year with its corresponding proxy statement filed in Jan 2011 (denoted as 2010 proxy in the figure).

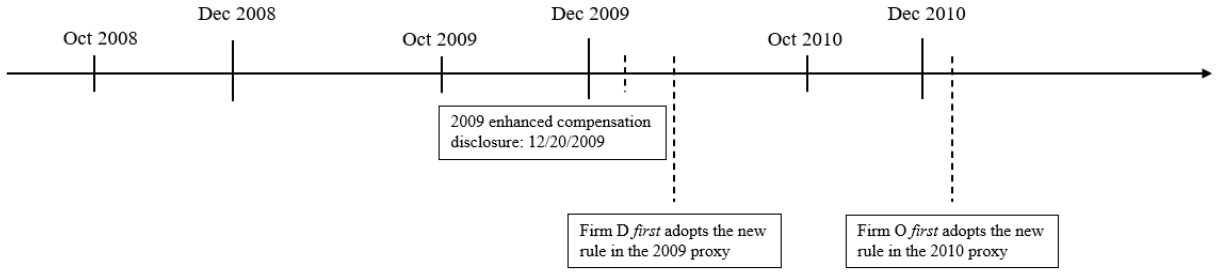

Figure 2. Percentage of pay restatements across industries

This figure presents the distribution of compensation restatements across the Fama–French 12 industries. *% restated pay* is the percentage of firms that have restated prior CEO compensation due to the Proxy Disclosure Enhancement rule in each industry.

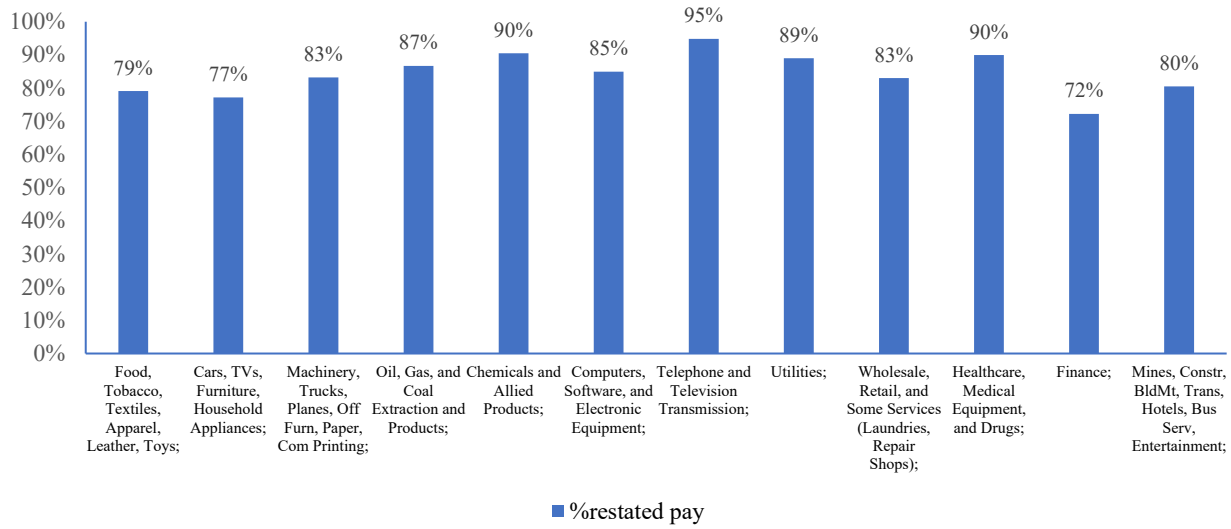

Table 1. Sample construction and summary statistics for pay restatements

Panel A presents information on the sample construction and the impact of data filters on the initial sample of U.S. public firms with valid CEO compensation data for at least one year before and after the Proxy Disclosure Enhancement rule. Panel B provides the summary statistics of pay restatement information for the 2,255 firms with pay restatement. *Equity restatement* equals the aggregated dollar amount of equity pay restatements for preceding years covered in the proxy statement of the restatement year. Each preceding year's equity restatement is computed as the restated equity awards value disclosed in the Summary Compensation Table of the proxy statement filed for the year of restatement minus the originally reported equity awards value in the Summary Compensation Table of the proxy statement filed in the preceding year. *Salary, Short-term cash incentive,* and *Long-term cash incentive restatements* are all calculated in the same way as *Equity restatement* using the respective compensation component values. *PayRestatement* is *Equity restatement* scaled by the total assets in the year prior to the restatement year, expressed in percentage points. Variable definitions are in Appendix C. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Sample construction

U.S. Public Firms in 2009 and 2010 with valid CEO compensation and financial data	
Total number of unique firms	2,758
# Unique firms with compensation restatement	2,255
# Unique firms with compensation restatement in 2009	1,866
# Unique firms with compensation restatement in 2010	389
# Unique firms without compensation restatement in both years	503

Panel B. Summary statistics of pay restatements

	Obs.	Mean	Std	P10	P25	Median	P75	P90
Equity restatement ($000)	2,255	743.955	3,169.656	-1,222.393	-156.462	175.801	1,169.384	3,544.270
Salary restatement ($000)	2,255	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Short-term cash incentives restatement ($000)	2,255	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Long-term cash incentives restatement ($000)	2,255	0.011	0.079	0.000	0.000	0.000	0.000	0.000
PayRestatement (%)	2,255	0.111	0.435	-0.114	-0.011	0.013	0.120	0.413

Table 2. Summary statistics and the correlation matrix of regression variables

Panel A provides the summary statistics of CEO total pay and firm characteristics for the regression sample (discussed in Section 4.1.1.) Panel B provides the correlation matrix between pay restatement variables and firm characteristics measured in the year immediately prior to the year of restatement disclosure. Variable definitions are in Appendix C.

Panel A. Summary statistics

	Obs.	Mean	Std	P25	Median	P75
Total pay ($000)	3,485	3,077.014	3,910.700	619.569	1,499.377	3,898.598
Firm size ($million)	3,485	4,968.023	14,462.000	217.821	773.067	2,733.547
ROA	3,485	0.085	0.137	0.019	0.087	0.150
Sale growth	3,485	-0.014	0.281	-0.153	-0.034	0.077
Stock volatility	3,485	0.738	0.279	0.543	0.696	0.882
Tobin's q	3,485	1.556	0.964	0.988	1.200	1.739
TSR	3,485	0.386	0.784	-0.068	0.202	0.605
Instl.BlockOwn	3,485	0.175	0.144	0.060	0.152	0.264

Panel B. Correlation matrix between pay restatement variables and firm characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) PayRestatement	--									
(2) SR_Up	0.564***	--								
(3) SR_Down	-0.354***	-0.369***	--							
(4) Firm size$_{t-1}$	-0.026	-0.063***	-0.019	--						
(5) ROA$_{t-1}$	-0.057***	-0.025	-0.040**	-0.022	--					
(6) Sale growth$_{t-1}$	0.082***	0.077***	-0.044**	-0.050***	0.146***	--				
(7) Stock volatility$_{t-1}$	0.106***	0.140***	-0.008	-0.094***	-0.207***	0.067***	--			
(8) Tobin's q$_{t-1}$	0.195***	0.181***	-0.029	-0.033*	0.138***	0.190***	0.092***	--		
(9) TSR$_{t-1}$	-0.063***	-0.056***	0.017	-0.030	0.127***	0.029	0.168***	0.351***	--	
(10) Instl.BlockOwn$_{t-1}$	0.056***	0.171***	0.027	-0.089***	0.024	0.001	0.054***	-0.007	-0.070***	--

Table 3. Pay restatement and CEO total pay

This table presents baseline regression results for the relation between restatements of prior years' total compensation and CEO total pay in the restatement year. In columns (1) and (2), the dependent variable is the natural logarithm of total CEO pay in the restatement year. In columns (3) and (4), the dependent variable is the difference in total pay between the restatement year and the year prior. *PayRestatement* is the sum of equity pay restatements for preceding years covered in the restatement disclosure scaled by the total assets in the year prior to the restatement year. *SR_Up* equals one if equity pay restatement is ranked within the top tercile, and zero otherwise. *SR_Down* equals one if equity pay restatement is ranked within the bottom tercile, and zero otherwise. We control firm characteristics in both the year of restatement disclosure and the year prior. All regressions include the 2009 year indicator and industry dummies based on the Fama–French 48-industry classification. Variable definitions are in Appendix C. Heteroscedasticity-robust standard errors clustered by firms are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Ln(Total pay)		ΔTotal Pay	
	(1)	(2)	(3)	(4)
PayRestatement	-0.271***		-0.682***	
	(0.061)		(0.159)	
SR_Up		-0.151***		-0.490***
		(0.022)		(0.092)
SR_Down		0.132***		0.482***
		(0.022)		(0.131)
$Ln(Total\ pay)_{t-1}$	0.684***	0.678***		
	(0.027)	(0.029)		
$Total\ pay_{t-1}$			-0.321***	-0.322***
			(0.033)	(0.033)
Ln(Firm size)	0.277***	0.270***	0.537***	0.519***
	(0.073)	(0.071)	(0.158)	(0.159)
ROA	0.434*	0.461**	0.790	0.853*
	(0.220)	(0.222)	(0.506)	(0.504)
Sale growth	0.088*	0.087*	0.333**	0.348**
	(0.046)	(0.047)	(0.150)	(0.154)
Stock volatility	-0.118***	-0.129***	-0.379***	-0.404***
	(0.037)	(0.037)	(0.099)	(0.096)
Tobin's q	0.063**	0.060*	0.189**	0.174**
	(0.030)	(0.031)	(0.077)	(0.073)
TSR	0.063**	0.059**	0.094	0.083
	(0.027)	(0.027)	(0.072)	(0.070)
$Ln(Firm\ size)_{t-1}$	-0.134*	-0.126	-0.074	-0.065
	(0.079)	(0.078)	(0.163)	(0.161)
ROA_{t-1}	-0.374*	-0.346*	-0.722	-0.631
	(0.199)	(0.197)	(0.556)	(0.543)
$Sale\ growth_{t-1}$	-0.037	-0.034	-0.124	-0.108
	(0.044)	(0.043)	(0.138)	(0.139)
$Stock\ volatility_{t-1}$	0.028	0.029	-0.164	-0.142
	(0.058)	(0.055)	(0.186)	(0.190)
Tobin's q_{t-1}	-0.039	-0.047	-0.104	-0.112
	(0.028)	(0.030)	(0.086)	(0.086)
TSR_{t-1}	0.061**	0.068**	0.062	0.065
	(0.026)	(0.026)	(0.091)	(0.089)
$Instl.BlockOwn_t$	0.168**	0.182**	-0.913***	-0.863***
	(0.073)	(0.076)	(0.283)	(0.283)
Ind. and yr. fixed effects	Yes	Yes	Yes	Yes
Obs.	3,485	3,485	3,485	3,485
Adj-R^2	0.82	0.82	0.28	0.29

Table 4. Pay restatement and CEO total pay: The analysis for performance subsamples

This table presents the regression results for the relation between pay restatement and CEO total pay in performance subsamples. We split our sample into two groups based on the median value of TSR or ROA from the year prior to the restatement year. TSR is the cumulative buy-and-hold stock return over the fiscal year. ROA is the ratio of operating income before interest, depreciation, and tax to total assets. Panel A reports the subsample analysis of CEO pay based on TSR. Panel B reports the subsample analysis of CEO pay based on ROA. In columns (1) to (4), the dependent variable is the natural logarithm of CEO total pay in the restatement year. In columns (5) and (8), the dependent variable is the difference in total pay between the restatement year and the year prior. The odd (even) columns present results in the subsample if the past performance is below (above) the median. *PayRestatement* is the sum of equity pay restatements scaled by the total assets in the year prior to the restatement year. *SR_Up* equals one if equity pay restatement is ranked within the top tercile, and zero otherwise. *SR_Down* equals one if equity pay restatement is ranked within the bottom tercile, and zero otherwise. We control firm characteristics in the year of restatement disclosure and one year prior. All regressions include the 2009 year indicator and industry dummies based on the Fama–French 48-industry classification. Variable definitions are in Appendix C. Heteroscedasticity-robust standard errors clustered by firms are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Subsamples based on pre-restatement year stock performance (TSR)

	Ln(Total pay)				Δ Total Pay			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Performance Group:	Below	Above	Below	Above	Below	Above	Below	Above
PayRestatement	-0.179***	-0.499***			-0.474***	-1.178***		
	(0.056)	(0.092)			(0.136)	(0.225)		
SR_Up			-0.172***	-0.122***			-0.461***	-0.513***
			(0.029)	(0.037)			(0.122)	(0.143)
SR_Down			0.129***	0.120***			0.428**	0.464***
			(0.028)	(0.028)			(0.178)	(0.149)
$Ln(Total\ pay)_{t-1}$	0.604***	0.762***	0.612***	0.736***				
	(0.027)	(0.035)	(0.027)	(0.041)				
$Total\ pay_{t-1}$					-0.404***	-0.252***	-0.400***	-0.261***
					(0.043)	(0.035)	(0.041)	(0.036)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind. and yr. fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1,720	1,765	1,720	1,765	1,720	1,765	1,720	1,765
Adj-R^2	0.79	0.85	0.80	0.84	0.35	0.24	0.36	0.24

(continued.)

Table 4 continued.

Panel B. Subsamples based on pre-restatement year operating performance (ROA)

	Ln(Total pay)				ΔTotal Pay			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Performance Group:	Below	Above	Below	Above	Below	Above	Below	Above
PayRestatement	-0.164**	-0.422***			-0.416**	-1.143***		
	(0.062)	(0.081)			(0.160)	(0.181)		
SR_Up			-0.111***	-0.174***			-0.359***	-0.601***
			(0.031)	(0.031)			(0.133)	(0.126)
SR_Down			0.112***	0.158***			0.283**	0.678***
			(0.028)	(0.034)			(0.128)	(0.192)
$Ln(Total\ pay)_{t-1}$	0.575***	0.759***	0.573***	0.746***				
	(0.036)	(0.034)	(0.035)	(0.038)				
$Total\ Pay_{t-1}$					-0.388***	-0.289***	-0.387***	-0.296***
					(0.050)	(0.040)	(0.048)	(0.039)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind. and yr. fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1,722	1,763	1,722	1,763	1,722	1,763	1,722	1,763
Adj-R^2	0.79	0.84	0.79	0.84	0.34	0.26	0.34	0.27

Table 5. Pay restatement and CEO total pay: Exclude firms with non-overlapping equity grants

This table presents the regression results for the relation between pay restatement and CEO total pay in restatement year in a subsample that excludes firms that grant equity awards on a non-overlapping basis. The sample of firms is restricted to those covered by ISS Incentive Lab to identify the grant cycle information of equity awards. Firms that make only one long-term equity grant during the three-year period preceding the restatement year are excluded from the regression sample. *PayRestatement* is the sum of equity pay restatements scaled by the total assets in the year prior to the restatement year. *SR_Up* equals one if equity pay restatement is ranked within the top tercile, and zero otherwise. *SR_Down* equals one if equity pay restatement is ranked within the bottom tercile, and zero otherwise. We control firm characteristics in the year of restatement disclosure and one year prior. All regressions include the 2009 year indicator and industry dummies based on the Fama–French 48-industry classification. Variable definitions are in Appendix C. Heteroscedasticity-robust standard errors clustered by firms are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Ln(Total pay)		ΔTotal Pay	
	(1)	(2)	(3)	(4)
PayRestatement	-0.748***		-1.819***	
	(0.243)		(0.457)	
SR_Up		-0.164**		-0.611*
		(0.068)		(0.324)
SR_Down		0.102**		0.558**
		(0.045)		(0.227)
$Ln(Total\ pay)_{t-1}$	0.742***	0.706***		
	(0.035)	(0.046)		
$Total\ pay_{t-1}$			-0.319***	-0.337***
			(0.047)	(0.041)
Control variables	Yes	Yes	Yes	Yes
Ind. and yr. fixed effects	Yes	Yes	Yes	Yes
Obs.	804	804	804	804
Adj-R^2	0.70	0.69	0.31	0.31

Table 6 Pay restatement and CEO total pay: additional governance controls

This table presents regression results for the relation between pay restatements and CEO total pay after control for CEO power and board independence. In columns (1) and (2), the dependent variable is the natural logarithm of CEO total pay in the restatement year. In columns (3) and (4), the dependent variable is the difference in total pay between the restatement year and the year prior. *PayRestatement* is the sum of equity pay restatements scaled by the total assets in the year prior to the restatement year. *SR_Up* equals one if equity pay restatement is ranked within the top tercile, and zero otherwise. *SR_Down* equals one if equity pay restatement is ranked within the bottom tercile, and zero otherwise. We control firm characteristics in both the restatement year and the year prior. All regressions include the 2009 year indicator and industry dummies based on the Fama–French 48-industry classification. Variable definitions are in Appendix C. Heteroscedasticity-robust standard errors clustered by firms are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Ln(Total pay)		ΔTotal Pay	
	(1)	(2)	(3)	(4)
PayRestatement	-0.416***		-1.027***	
	(0.106)		(0.265)	
SR_Up		-0.158***		-0.412***
		(0.035)		(0.138)
SR_Down		0.131***		0.685***
		(0.030)		(0.167)
$Ln(Total\ pay)_{t-1}$	0.649***	0.636***		
	(0.039)	(0.041)		
$Total\ pay_{t-1}$			-0.361***	-0.366***
			(0.041)	(0.040)
CEO duality	0.047*	0.047**	0.134	0.121
	(0.024)	(0.023)	(0.118)	(0.116)
CEO age	-0.002	-0.003	-0.002	-0.005
	(0.002)	(0.002)	(0.008)	(0.008)
Independent director ratio	0.059	0.075	-0.079	-0.042
	(0.052)	(0.052)	(0.247)	(0.244)
Control variables	Yes	Yes	Yes	Yes
Ind. and yr. fixed effects	Yes	Yes	Yes	Yes
Obs.	1,858	1,858	1,858	1,858
Adj-R^2	0.72	0.71	0.31	0.32

Table 7. Pay restatement and CEO total pay: The DiD analysis

This table uses a difference-in-differences (DiD) analysis with treatment intensity to examine the relation between pay restatement and CEO total pay using data from 2008 and 2009. In columns (1) and (2), the dependent variable is the natural logarithm of CEO total pay in the restatement year. In columns (3) and (4), the dependent variable is the difference in total pay between the restatement year and the year prior. *PayRestatement* is the sum of equity pay restatements scaled by the total assets in the year prior to the restatement year. *SR_Up* equals one if equity pay restatement is ranked within the top tercile, and zero otherwise. *SR_Down* equals one if equity pay restatement is ranked within the bottom tercile, and zero otherwise. *Treated* equals one if the firm's fiscal year end is on or after Dec 20, 20009, and zero otherwise. *Post* equals one if the fiscal year is 2009, and zero if the fiscal year is 2008. We control firm characteristics from both the restatement year and the year prior. All regressions include industry dummies based on the Fama–French 48-industry classification. Variable definitions are in Appendix C. Heteroscedasticity-robust standard errors clustered by firms are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Ln(Total pay)		ΔTotal Pay	
	(1)	(2)	(3)	(4)
Treated × Post × PayRestatement	-0.210***		-0.585***	
	(0.059)		(0.160)	
Treated × Post × SR_Up		-0.181***		-0.603***
		(0.024)		(0.107)
Treated × Post × SR_Down		0.127***		0.442***
		(0.026)		(0.154)
Treated × Post	-0.008	-0.010	0.193*	0.193**
	(0.026)	(0.025)	(0.100)	(0.089)
Post	0.020	0.020	0.077	0.073
	(0.026)	(0.026)	(0.084)	(0.082)
$Ln(Total\ pay)_{t-1}$	0.676***	0.679***		
	(0.026)	(0.026)		
$Total\ Pay_{t-1}$			-0.323***	-0.321***
			(0.023)	(0.023)
Control variables	Yes	Yes	Yes	Yes
Ind. fixed effects	Yes	Yes	Yes	Yes
Obs.	4,959	4,959	4,959	4,959
Adj-R^2	0.83	0.83	0.28	0.29

Table 8. Pay restatement and CEO total pay: Timeline analysis

This table presents the regression results for the relation between pay restatement and CEO total pay in a subsample that excludes firms where the reported grant dates for all compensation plans granted in fiscal year 2009 fall before July 17, 2009. In columns (1) and (2), the dependent variable is the natural logarithm of CEO total pay in the restatement year. In columns (3) and (4), the dependent variable is the difference in total pay between the restatement year and the year prior. *PayRestatement* is the sum of equity pay restatements scaled by the total assets in the year prior to the restatement year. *SR_Up* equals one if equity pay restatement is ranked within the top tercile, and zero otherwise. *SR_Down* equals one if equity pay restatement is ranked within the bottom tercile, and zero otherwise. We control firm characteristics in the year of restatement disclosure and one year prior. All regressions include the 2009 year indicator and industry dummies based on the Fama–French 48-industry classification. Variable definitions are in Appendix C. Heteroscedasticity-robust standard errors clustered by firms are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Ln(Total pay)		ΔTotal Pay	
	(1)	(2)	(3)	(4)
PayRestatement	-0.330***		-0.743***	
	(0.074)		(0.170)	
SR_Up		-0.211***		-0.437***
		(0.033)		(0.132)
SR_Down		0.132***		0.481***
		(0.030)		(0.167)
$Ln(Total\ pay)_{t-1}$	0.730***	0.725***		
	(0.029)	(0.029)		
$Total\ pay_{t-1}$			-0.265***	-0.270***
			(0.039)	(0.038)
Ln(Firm size)	0.275***	0.273***	0.759***	0.728***
	(0.090)	(0.089)	(0.194)	(0.188)
ROA	0.602**	0.611**	0.892	0.912
	(0.225)	(0.236)	(0.583)	(0.569)
Sale growth	0.026	0.027	0.258**	0.267**
	(0.052)	(0.050)	(0.124)	(0.125)
Stock volatility	-0.119***	-0.127***	-0.223**	-0.274***
	(0.043)	(0.043)	(0.095)	(0.094)
Tobin's q	0.043	0.038	0.220**	0.199**
	(0.039)	(0.040)	(0.091)	(0.094)
TSR	0.065*	0.066*	0.051	0.052
	(0.034)	(0.033)	(0.080)	(0.081)
$Ln(Firm\ size)_{t-1}$	-0.155	-0.151	-0.386*	-0.350
	(0.099)	(0.099)	(0.221)	(0.210)
ROA_{t-1}	-0.526**	-0.506**	-0.822	-0.748
	(0.240)	(0.237)	(0.608)	(0.595)
$Sale\ growth_{t-1}$	-0.002	0.006	-0.067	-0.040
	(0.045)	(0.042)	(0.114)	(0.113)
$Stock\ volatility_{t-1}$	0.074	0.060	-0.068	-0.049
	(0.064)	(0.061)	(0.206)	(0.219)
Tobin's q_{t-1}	-0.045	-0.052	-0.189*	-0.195*
	(0.041)	(0.044)	(0.106)	(0.112)
TSR_{t-1}	0.037	0.048	-0.006	0.018
	(0.032)	(0.031)	(0.110)	(0.109)
$Instl.BlockOwn_t$	0.194**	0.203**	-0.514	-0.528
	(0.088)	(0.096)	(0.333)	(0.341)
Ind. and yr. fixed effects	Yes	Yes	Yes	Yes
Obs.	2,366	2,366	2,366	2,366
Adj-R^2	0.80	0.80	0.22	0.22

Table 9. Pay restatement and non-CEO executive pay

The table presents regression results for the relation between pay restatements and non-CEO executive total pay in the restatement year. In columns (1) and (2), the dependent variable is the natural logarithm of an executive's total pay in the restatement year. In columns (3) and (4), the dependent variable is the difference in total pay between the restatement year and the year prior. *PayRestatement* is the sum of equity pay restatements for the executive scaled by total assets in the year prior to the restatement year. *SR_Up* equals one if equity pay restatement is ranked within the top tercile, and zero otherwise. *SR_Down* equals one if equity pay restatement is ranked within the bottom tercile, and zero otherwise. We control firm characteristics in both the restatement year and the year prior. All regressions include the 2009 year indicator and industry dummies based on the Fama–French 48-industry classification. Variable definitions are in Appendix C. Heteroscedasticity-robust standard errors clustered by firms are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Ln(Total pay)		ΔTotal Pay	
	(1)	(2)	(3)	(4)
PayRestatement	-0.269***		-0.442***	
	(0.067)		(0.086)	
SR_Up		-0.055***		-0.103***
		(0.015)		(0.028)
SR_Down		0.057***		0.098***
		(0.012)		(0.026)
$Ln(Total\ pay)_{t-1}$	0.676***	0.675***		
	(0.023)	(0.023)		
$Total\ pay_{t-1}$			-0.271***	-0.272***
			(0.021)	(0.020)
Firm control variables	Yes	Yes	Yes	Yes
Ind. and yr. fixed effects	Yes	Yes	Yes	Yes
Obs.	10,734	10,734	10,734	10,734
Adj-R^2	0.82	0.82	0.22	0.22

Table 10. Pay restatement and CEO total pay: Subsample analyses

The table presents regression results from subsample analysis of the relation between pay restatements and CEO total pay in the restatement year. In Panel A, the subsamples are classified based on the median CEO total compensation reported in the year prior to the SEC rule change. Panel B presents the subsamples based on the median value of institutional blockholder ownership. Panel C presents subsample based on CEO duality. CEO duality is one if the CEO is also the chairman of the board, and zero otherwise. Panel D presents subsamples based on the sample median of the ratio of independent directors in the board. The dependent variable is the natural logarithm of total pay in the restatement year in columns (1) to (4), and the difference in total pay between the restatement year and the year prior in columns (5) to (8). *PayRestatement* is the sum of equity pay restatement scaled by total assets in the year prior to the restatement year. *SR_Up* equals one if *PayRestatement* is ranked within the top tercile, and zero otherwise. *SR_Down* equals one if *PayRestatement* is ranked within the bottom tercile, and zero otherwise. We control firm characteristics in both the restatement year and the year prior. All regressions include the 2009 year indicator and industry dummies based on the Fama–French 48-industry classification. Variable definitions are in Appendix C. Heteroscedasticity-robust standard errors clustered by firms are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Subsample analysis based on prior CEO total pay

	Ln(Total pay)				ΔTotal Pay			
CEO total pay$_{t-1}$	Above	Below	Above	Below	Above	Below	Above	Below
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PayRestatement	-0.335***	-0.118**			-0.735***	-0.161***		
	(0.072)	(0.058)			(0.250)	(0.058)		
SR_Up			-0.184***	-0.041			-0.503***	-0.025
			(0.024)	(0.028)			(0.122)	(0.033)
SR_Down			0.128***	0.124***			0.675***	0.206***
			(0.031)	(0.038)			(0.201)	(0.065)
Ln(Total pay)$_{t-1}$	0.554***	0.724***	0.530***	0.720***				
	(0.029)	(0.040)	(0.034)	(0.043)				
Total pay$_{t-1}$					-0.391***	-0.219***	-0.392***	-0.234***
					(0.045)	(0.075)	(0.043)	(0.080)
Test whether coefficient of the pay restatement variable is equal between the above and below groups:								
P-value:	0.00		0.00 (for SR_Up) 0.95 (for SR_Down)		0.01		0.00 (for SR_Up) 0.02 (for SR_Down)	
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind. and yr. fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1,742	1,743	1,742	1,743	1,742	1,743	1,742	1,743
Adj-R^2	0.64	0.57	0.64	0.58	0.34	0.13	0.35	0.14

(continued.)

Table 10. continued.

Panel B. Subsample analysis based on institutional block ownership

	Ln(Total pay)				ΔTotal Pay			
Instl.BlockOwn $_{t-1}$	Above	Below	Above	Below	Above	Below	Above	Below
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PayRestatement	-0.295***	-0.229***			-0.704***	-0.598***		
	(0.084)	(0.064)			(0.204)	(0.172)		
SR_Up			-0.175***	-0.111**			-0.498***	-0.483***
			(0.025)	(0.044)			(0.087)	(0.119)
SR_Down			0.089**	0.187***			0.266**	0.719***
			(0.034)	(0.039)			(0.117)	(0.239)
Ln(Total pay)$_{t-1}$	0.629***	0.736***	0.626***	0.726***				
	(0.045)	(0.030)	(0.046)	(0.028)				
Total pay$_{t-1}$					-0.359***	-0.295***	-0.361***	-0.296***
					(0.065)	(0.037)	(0.063)	(0.037)
Test if the coefficient of the pay restatement variable is equal between the above and below groups:								
P-value:	0.48		0.19 (for SR_Up) 0.06 (for SR_Down)		0.59		0.90 (for SR_Up) 0.04 (for SR_Down)	
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind. and yr. fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1,742	1,743	1,742	1,743	1,742	1,743	1,742	1,743
Adj-R^2	0.73	0.86	0.73	0.87	0.33	0.24	0.33	0.26

Panel C. Subsample analysis based on CEO duality

	Ln(Total pay)				ΔTotal Pay			
CEO duality$_{t-1}$	=1	=0	=1	=0	=1	=0	=1	=0
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PayRestatement	-0.471***	-0.347**			-1.216***	-0.785**		
	(0.154)	(0.129)			(0.331)	(0.339)		
SR_Up			-0.120***	-0.169***			-0.358*	-0.307**
			(0.038)	(0.061)			(0.198)	(0.151)
SR_Down			0.136***	0.132**			0.761***	0.711***
			(0.032)	(0.055)			(0.199)	(0.223)

(continued)

Table 10 continued

Ln(Total pay)$_{t-1}$	0.659***	0.637***	0.640***	0.630***				
	(0.049)	(0.069)	(0.050)	(0.072)				
Total pay$_{t-1}$					-0.371***	-0.387***	-0.381***	-0.387***
					(0.044)	(0.085)	(0.041)	(0.084)
Test if the coefficient of the pay restatement variable is equal between the above and below groups:								
P-value:	0.52		0.51 (for SR_Up)		0.24		0.82 (for SR_Up)	
			0.94 (for SR_Down)				0.83 (for SR_Down)	
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind. and yr. fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1,026	847	1,026	847	1,026	847	1,026	847
Adj-R^2	0.74	0.66	0.73	0.66	0.33	0.29	0.34	0.30

Panel D. Subsample analysis based on the ratio of independent directors

	Ln(Total pay)				ΔTotal Pay			
Independent director ratio$_{t-1}$	Above	Below	Above	Below	Above	Below	Above	Below
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PayRestatement	-0.447***	-0.422***			-1.098***	-1.117***		
	(0.067)	(0.130)			(0.353)	(0.335)		
SR_Up			-0.142***	-0.201***			-0.343*	-0.545***
			(0.044)	(0.054)			(0.200)	(0.195)
SR_Down			0.091***	0.133***			0.639***	0.594***
			(0.028)	(0.049)			(0.220)	(0.220)
Ln(Total pay)$_{t-1}$	0.653***	0.637***	0.640***	0.625***				
	(0.059)	(0.051)	(0.060)	(0.056)				
Total pay$_{t-1}$					-0.437***	-0.267***	-0.443***	-0.270***
					(0.032)	(0.058)	(0.031)	(0.057)
Test if the coefficient of the pay revision variable is equal between the above and below groups:								
P-value:	0.86		0.38 (for SR_Up)		0.97		0.49 (for SR_Up)	
			0.43 (for SR_Down)				0.86 (for SR_Down)	
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind. and yr. fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	914	933	914	933	914	933	914	933
Adj-R^2	0.71	0.68	0.71	0.68	0.41	0.22	0.41	0.23

Table 11. Pay restatement and future CEO pay

This table presents the regression results of the relation between pay restatement and future CEO pay in one or two years after the restatement year. In columns (1) to (2), the dependent variable is the natural logarithm of total pay one year after the restatement year. In columns (3) to (4), the dependent variable is the natural logarithm of total pay two years after the restatement year. In columns (5) to (6), the dependent variable is the annual difference in CEO total pay between the year after the restatement year and the restatement year. In columns (7) to (8), the dependent variable is the annual difference in CEO total pay between the second year after the restatement year and one year after the restatement year. *PayRestatement* is the sum of equity pay restatements scaled by total assets in the year prior to the restatement year. *SR_Up* equals one if equity pay restatement is ranked within the top tercile, and zero otherwise. *SR_Down* equals one if equity pay restatement is ranked within the bottom tercile, and zero otherwise. We control firm characteristics in both the year of the dependent variable is measured and one year prior. All regressions include the 2009 year indicator and industry dummies based on the Fama–French 48-industry classification. Variable definitions are in Appendix C. Heteroscedasticity-robust standard errors clustered by firms are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Ln(Total pay)				ΔTotal Pay			
	One year after		Two years after		One year after		Two years after	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PayRestatement	0.063		0.026		0.147		0.004	
	(0.040)		(0.044)		(0.092)		(0.183)	
SR_Up		0.130***		0.088*		0.271**		0.123
		(0.032)		(0.046)		(0.126)		(0.192)
SR_Down		0.004		0.058		-0.086		0.171
		(0.027)		(0.046)		(0.152)		(0.140)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind. and yr. fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	2,100	2,100	1,667	1,667	2,100	2,100	1,667	1,667
Adj-R^2	0.81	0.81	0.79	0.79	0.11	0.11	0.11	0.11