

When the Tax Break Breaks: CEO Pay and Turnover Following TCJA*

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ABSTRACT

We examine how firms adjust CEO compensation following the Tax Cuts and Jobs Act (TCJA), which eliminated the tax deductibility of performance-based pay. Comparing firms with different levels of performance-based pay, CEOs with unaffected executives in the same firm-year, and U.S. firms with international firms, we find that CEO performance pay and total compensation decrease following the TCJA relative to the control group. The effects are stronger for more cost-sensitive firms and those requiring firm-specific human capital. Consistent with a moral hazard model, we also find that by raising the after-tax cost of compensation, TCJA created significant labor market disruptions.

Keywords: CEO compensation, performance pay, TCJA, CEO turnover, executive labor market

JEL codes: G34, J24, J41

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“Prior to the TCJA, the Committee considered, among other things, the impact of the exclusion for performance-based compensation when developing and implementing our executive compensation programs. Annual cash incentive awards under our Executive Performance Sharing Plan, long-term cash incentive awards under our Long-Term Incentive Plan, and stock options under our Stock Incentive Plan were designed in a manner intended to meet the requirements...”

— Nike, Inc., proxy statement filed on July 23, 2019

I. Introduction

Executive compensation has been at the center of academic and policy debates for decades, with particular attention paid to the role of tax policy in shaping compensation practices (see, e.g., [Hall and Liebman, 2000](#), [Goolsbee, 2000](#), [Perry and Zenner, 2001](#), [Rose and Wolfram, 2002](#), [Frydman and Molloy, 2011](#), [Frydman and Saks, 2010](#), [Bird, 2018](#), [Murphy, 2013](#)). This interest is partly driven by the fact that legislators have generally avoided directly capping the level of pay and have focused instead on taxation as a tool for influencing executive pay in the United States ([Edmans, Gabaix, and Jenter, 2017](#), [Murphy and Jensen, 2018](#)).¹

One of the most significant tax-based interventions came in 1993, when Congress passed Section 162(m) of the Internal Revenue Code (IRC), which limited the tax deductibility of non-performance-based executive compensation to \$1 million, while leaving performance-based pay fully deductible. While the policy was intended to curb CEO pay and better align managerial incentives with shareholder interests, critics argue that it may have inadvertently prompted firms to adopt high levels of performance-based pay solely for tax reasons, often replacing discretionary plans with overly formulaic ones ([Murphy and Oyer, 2004](#)).

¹Recent examples include Senator Bernie Sanders’ introduction of the “Tax Excessive CEO Pay Act,” which would impose higher corporate tax rates on companies with high CEO-to-median-worker pay ratios, and San Francisco’s Proposition L, the “Overpaid Executive Tax,” passed in 2020, which applies a surtax to companies doing business in the city where the CEO-to-median-worker pay ratio exceeds 100:1. [Murphy and Jensen \(2018\)](#) argue that one reason Congress has avoided directly capping CEO pay is that such caps could interfere with or override state-level rules.

The Tax Cuts and Jobs Act (TCJA) of 2017 marked a fundamental shift in the taxation of executive compensation by eliminating the performance pay exception, thereby expanding the limits on the deductibility of executive pay and subjecting all forms of compensation to the same tax treatment.² This regulatory change provides a unique empirical setting to investigate whether firms had previously maintained high levels of performance pay primarily to capture tax benefits. If firms’ reliance on performance pay was driven by tax considerations rather than by economic fundamentals, such as balancing the higher risk premium required by managers (Holmstrom and Milgrom, 1987, Albuquerque, Albuquerque, Carter, and Dong, 2024) against potential gains in performance, optimized risk-taking, and reduced agency costs (Morgan and Poulsen, 2001, Jensen and Murphy, 1990, Coles, Daniel, and Naveen, 2006, Shue and Townsend, 2017, Mehran, 1995), then we would expect a significant decline in performance-based compensation following the elimination of its preferential tax treatment.³

In this paper, we exploit the TCJA’s elimination of the performance-based pay deduction to examine how tax policy affects the structure and level of CEO compensation. We motivate our empirical analysis with a simple moral hazard model. The model explores how the loss of tax deductibility influences compensation design and CEO selection when firms either hire a given candidate or choose among candidates of varying ability. The model predicts that, after the TCJA, firms reduce their reliance on performance-based pay, which results in

²In 2017, the average firm in our sample had \$4.7 million, or 29%, of non-deductible executive compensation under Section 162(m) rules, and \$11.7 million, or 74%, under the new TCJA rules.

³Anecdotal evidence suggests that tax treatment materially influences how firms structure executive pay. For example, Renasant Corp. stated in its 2018 proxy: *“Effective as of January 1, 2018, all compensation paid to a covered employee in excess of \$1 million is non-deductible. The Committee expects that this change may provide more flexibility to design performance-based awards, which will remain a substantial part of our executive compensation program.”* Similarly, Arrow Electronics, Inc. noted in its proxy: *“Such awards were annual incentive awards granted solely to executive-level Section 162(m) ‘covered employees’ of the Company, and were specifically structured to meet the pre-TCJA performance-based compensation exemption to the Section 162(m) deduction limitation. Because such exemption has been eliminated for any new or materially modified award after November 2, 2017, there is no continuing need to offer Covered Employee Annual Incentive Awards under the Plan. Thus, beginning in 2019, no further Covered Employee Annual Incentive Awards will be granted under the Plan.”* Appendix IA.1 provides more examples.

lower total CEO compensation and an ambiguous effect on non-performance-based pay. In addition, the higher after-tax cost of executive compensation may prompt firms to replace high-ability CEOs with more affordable, but less able ones. As a result, firms reduce their use of performance-based pay, and the negative impact of the TCJA on performance-based pay and total compensation is expected to be greater when CEO turnover occurs.

To empirically evaluate the model’s predictions, we implement three identification strategies. The first is a simple difference-in-differences design that exploits cross-sectional variation in firms’ pre-TCJA exposure, since firms with higher levels of performance-based pay prior to the reform faced stronger tax-related incentives to adjust their compensation.⁴ The second, a triple-difference strategy, additionally leverages the fact that compensation for executives ranked below the top five was never subject to deductibility limits, making them an effective control group and enabling within-firm-year comparisons. The latter is particularly important given concerns raised in prior work (De Simone, McClure, and Stomberg, 2022, Luna, Schuchard, and Stanley, 2023) that the TCJA, as a comprehensive reform, may have affected firms through multiple channels. Because other provisions applied to the entire firm without differentially affecting CEOs versus other executives, our triple-difference design compares CEOs to unaffected top executives within the same firm to isolate the effect of the policy change. Finally, our third identification strategy exploits the fact that the TCJA applied only to U.S.-incorporated public firms, but not to firms incorporated abroad. By comparing trends in CEO pay between matched international and U.S. firms before and after the TCJA, this approach helps mitigate concerns that our baseline DiD strategy may sort on unobservables related to firm characteristics.

Across three different strategies, we find that CEO performance-based pay declines sig-

⁴Specifically, the loss of the tax deduction would apply to \$13.4 million, or 54%, of executive compensation for treated firms, compared to \$1.9 million, or 22%, for control firms following the TCJA.

nificantly following the tax reform, with a 33% reduction relative to the control group in the triple-difference setting. At the same time, we find much smaller decreases in non-performance-based CEO pay in the baseline DiD and no significant changes in either the triple-difference specifications or tests using international firms as controls. The fact that adjustments occur only in performance-based components strongly suggests that firms were unwinding compensation arrangements that had been driven by tax considerations.

Changes in the design of performance-based pay after the TCJA offer insight into which elements were primarily structured to take advantage of Section 162(m) tax deductions, and which were used for other reasons, such as aligning executives' interests with those of shareholders. To better understand these changes, we examine which groups of performance metrics underwent significant adjustments following the TCJA. Relative to the control group, treated-firm CEOs experience smaller declines in short-term and accounting-based performance pay, and larger declines in long-term and stock price-based performance pay. One potential explanation is that when firms need to cut compensation, they tend to do so in areas where CEOs have the least control. CEOs plausibly have less control over stock prices and long-term performance measures, so boards may target these components.

Since the TCJA increased the cost of CEO talent, it is plausible that more cost-sensitive firms (e.g., financially constrained firms) and firms requiring specific human capital, such as CEO talent, adjusted their compensation packages to a greater extent. The results of our heterogeneous treatment analysis show that financially constrained firms and firms with specialist CEO talent exhibit a more elastic response to increases in the cost of executive compensation. Specifically, firms with a high size-age index or those that do not pay dividends ([Fazzari, Hubbard, and Petersen \(1988\)](#), [Hadlock and Pierce \(2010\)](#)) reduce CEOs' performance pay the most once deductibility is removed by the TCJA. In contrast, compensation adjustments are significantly smaller for CEOs with strong outside options, as

proxied by the general managerial skills index developed by [Custódio, Ferreira, and Matos \(2013\)](#). Overall, these results highlight an important labor-market consequence of the TCJA: increases in the effective cost of executive compensation disproportionately affect more cost-sensitive firms and firms whose CEOs with fewer outside opportunities, potentially altering the matching of managerial talent to firms.

We next examine more directly whether the repeal of tax deductions for performance pay affects not only compensation levels and structure but also the broader executive labor market. The model suggests that firms may opt to replace higher-ability CEOs with lower-ability ones when they can no longer afford to retain the former. In effect, the tax deduction had previously enabled firms to offer higher compensation; once it was eliminated, firms had to reconsider how to retain executives who had become more expensive on an after-tax basis.

Consistent with the model, we find that the loss of compensation deductibility prompts treated firms to offer lower CEO compensation following the TCJA. Specifically, while all firms exhibited an upward trend in CEO compensation during the sample period, firms with high pre-TCJA performance-based pay experienced a 16% smaller increase relative to control firms after the reform. As a result of this relative decline in pay, CEO turnover increases among treated firms with higher-ability CEOs (proxied by higher stock returns). In particular, treated firms with high stock returns experience a 24% higher CEO turnover rate relative to the sample mean, compared with control firms following the TCJA. This increase in turnover is concentrated in states with weaker enforcement of non-compete agreements, consistent with the idea that tax-motivated CEO departures are more likely when executives face lower personal costs of mobility. We further find that firms tend to replace departing higher-ability CEOs with less expensive successors.

This pattern of increased CEO turnover among highly skilled executives is consistent with the view of [Murphy and Jensen \(2018\)](#), who argue that regulatory interventions often

generate unintended consequences and impose significant costs on firms. Supporting this view, we find that the removal of tax deductibility for performance-based pay reduces firm value, holding other elements of the tax reform constant. Specifically, we document a negative relation between the ex ante share of CEO performance-based pay and abnormal stock returns in response to the initial news about changes in executive pay tax deductibility, corresponding to an average decline of \$22 million in firm value.

Although our identification strategies collectively account for potential differences between treated and control firms and substantially limit the scope for alternative explanations, we conduct additional tests to address remaining concerns. First, we replicate our main tests after matching treated and control firms on industry and firm size. Second, we show that our results are unchanged when we include multi-dimensional fixed effects to control for potential differential trends across firms with different characteristics, such as year-by-firm size, year-by-ROA, year-by-leverage, and others. Third, we demonstrate that our findings hold within subsamples of firms differentially affected by other provisions of the TCJA, including firms with high or low income tax rates, domestic versus multinational firms, and small versus large firms. Fourth, to address the concern that the post-period includes unusual conditions related to the onset of the COVID-19 pandemic, we re-estimate our baseline results excluding post-2020 period. Fifth, to minimize the possibility of confounding events affecting our results, we reestimate our results using a short window of -1 to +1 years. Sixth, to ensure that our findings are not driven by a few CEOs with extremely large pay packages, we follow [Guthrie, Sokolowsky, and Wan \(2012\)](#) and estimate quantile regressions. Across all of these tests, our results remain unchanged. Finally, we conduct placebo tests in which we either randomly assign firms to treatment (based on odd or even GVKEY) or examine changes in performance-based pay for non-executive employees, where the TCJA left tax treatment unchanged, and, as expected, find no significant effects.

Our paper makes contribution to the literature on executive compensation and tax policy. While early compensation studies on the 1993 implementation of Section 162(m) found mixed results ([Balsam and Ryan, 1996](#), [Hall and Liebman, 2000](#), [Perry and Zenner, 2001](#), [Harris and Livingstone, 2002](#), [Rose and Wolfram, 2002](#)), and more recent work suggests only limited short-term responses of compensation practices to the TCJA ([De Simone, McClure, and Stomberg, 2022](#), [Luna, Schuchard, and Stanley, 2023](#)), we employ a novel identification strategy that isolates the impact of the TCJA from other concurrent tax changes. Our paper complements recent work by [Andreani, Ellahie, and Shivakumar \(2025\)](#), who examine the impact of one-off tax windfalls brought on by the reduction in the corporate tax rate under the TCJA on CEO compensation. Our findings show that some firms sustained high levels of performance-based pay in part due to tax incentives under Section 162(m), challenging the conventional view that tax policy has little effect on executive compensation. These results also speak to the optimality of compensation design: if performance-based pay were already at its incentive-optimal level, tax changes would have had little effect. In addition, the results shed light on the broader question of how sensitive firms are to the after-tax cost of executive labor, as financially constrained firms adjust their compensation the most once the TCJA increases the cost of CEO talent. We also demonstrate that tax policy can influence not only the level and structure of executive pay, but also firm-CEO matching, as some firms respond to higher after-tax compensation costs by replacing higher-ability CEOs with less expensive alternatives. Our results therefore suggest that policymakers should carefully consider how tax incentives interact with labor market forces when designing regulations intended to shape compensation practices.

II. Institutional Background and Related Literature

A. Evolution of Tax Policy Regarding Executive Pay

The tax treatment of executive compensation changed fundamentally in 1993 when Congress enacted Section 162(m) of the Internal Revenue Code as part of the Omnibus Budget Reconciliation Act. The legislation introduced a key distinction between performance-based and non-performance-based compensation. While it limited the tax deductibility of fixed compensation to \$1 million per year for “covered employees” (defined initially as the CEO and the four other highest-paid executives whose compensation was disclosed in the proxy statement), it preserved unlimited deductibility for qualified performance-based compensation.

Following changes to the SEC’s disclosure rules in 2006, which required firms to disclose the compensation of the CEO, CFO, and the next three highest-paid executives, the IRS issued Notice 2007-49 (June 11, 2007), clarifying that, despite the change in disclosure requirements, CFO compensation remained exempt from Section 162(m)’s deductibility limits (see [Murphy and Jensen \(2018\)](#) for a summary).

To qualify for the preferential tax treatment under Section 162(m), performance-based compensation had to meet several requirements. First, it needed oversight from a compensation committee including at least two outside directors. Second, the compensation arrangement required explicit shareholder approval. Third, the compensation committee had to certify that predetermined performance goals were achieved before payment. These requirements reflected Congress’ dual objectives of constraining the growth of executive pay while encouraging stronger alignment between compensation and firm performance.

Stock options were generally treated as performance-based compensation, provided their exercise price was at or above the market price on the grant date, as were formula-based bonuses tied to objective performance metrics. In contrast, base salaries, time-vested re-

stricted stock, options with an exercise price below market value, and discretionary bonuses tied to subjective performance metrics did not qualify as performance-based under Section 162(m) of the tax code.

The Tax Cuts and Jobs Act of 2017 marked an important departure from this quarter-century-old framework. Most significantly, the TCJA eliminated the performance-pay exception, subjecting all forms of executive compensation above \$1 million to the same tax treatment regardless of their link to performance. This change effectively nullified the tax advantage that had long incentivized firms to structure compensation around performance metrics. The TCJA also substantially expanded the scope of compensation subject to deduction limits. First, it broadened the definition of “covered employees” to include the CFO alongside the CEO and the three other highest-paid executives. Second, it introduced a novel “*once covered, always covered*” principle: any executive designated as a covered employee after December 31, 2016, permanently retained this status, even after leaving the company or upon death. This provision closed a significant loophole by preventing firms from avoiding deduction limits through deferred compensation arrangements.

While our empirical analysis focuses on the changes to the tax treatment of executive compensation and anecdotal evidence suggests that firms responded to these changes,⁵ these were not the only tax changes introduced by the TCJA. In fact, the legislation enacted broader reforms to the U.S. corporate tax code, with significant implications for corporate earnings and firm investment. Key changes included: (i) a reduction of the federal corporate income tax rate from 35% to 21%; (ii) the replacement of federal income taxes on dividends from foreign subsidiaries with a transition tax on the deemed repatriation of earnings from those subsidiaries; (iii) the elimination of the domestic production activity deduction and

⁵For example, more than half of firms mention in their 2018 proxies the TCJA and the effect it may have on compensation policy. See specific examples in Internet Appendix Table IA.1.

the corporate alternative minimum tax; (iv) a provision for 100% bonus depreciation on qualifying tangible assets; (v) the introduction of the global intangible low-taxed income (GILTI) and base erosion and anti-abuse tax (BEAT) provisions; and (vi) modifications to net operating loss carryforward and carryback rules.

Because these provisions may also affect firm behavior and executive pay through channels unrelated to Section 162(m), we take care to account for them in our empirical design. First, we compare treatment and control firms using difference-in-differences specifications that isolate the effects of the changes to the deductibility of executive compensation. Second, we include detailed firm characteristic-by-year fixed effects to control for the impact of other concurrent tax code changes. Third, we compare changes in CEO compensation with those of top executives who were not affected by Section 162(m), using within-firm-year variation.

B. Related Research

Research examining how tax deductibility affects executive compensation has evolved through several phases, each examining major policy shifts. Early studies following the 1993 implementation of Section 162(m) of the Internal Revenue Code document firms' initial responses to the performance-pay exception. For example, [Balsam and Ryan \(1996\)](#) find that firms already using performance-based pay are more likely to modify their compensation structures to meet Section 162(m) requirements, while [Perry and Zenner \(2001\)](#) find that bonus and total compensation payouts become increasingly sensitive to stock returns. [Harris and Livingstone \(2002\)](#) uncover an unintended consequence: firms paying CEOs less than \$1 million actually increase their cash compensation after Section 162(m), suggesting that the threshold becomes an anchor for "acceptable" compensation levels. [Hall and Liebman \(2000\)](#) and [Rose and Wolfram \(2002\)](#) reach similar conclusions, finding that while Section 162(m) serves as a focal point for salary levels, it has no material impact on total compensation. In related

work, [Balsam, Evans, and Yurko \(2019\)](#) find that firms increase fixed pay to CFOs after they are exempted from the definition of covered employees under Section 162(m). Finally, there is some evidence that firms subject to Section 162(m) modify their bonus plans by replacing discretionary plans with formulaic, overly generous ones ([Murphy and Oyer, 2004](#)).

More recent studies examining the TCJA’s elimination of the performance-pay deductibility focus primarily on short-term firm responses. Specifically, using 2017 and 2018 compensation data and an identification strategy that exploits whether a firm’s fiscal year-end falls just before or just after the TCJA’s effective date, [De Simone, McClure, and Stomberg \(2022\)](#) find no meaningful changes in total compensation, pay mix, or pay-performance sensitivity in the immediate post-TCJA period. Similarly, [Luna, Schuchard, and Stanley \(2023\)](#), focusing mainly on time-series evidence, document a short-term increase in CEO salaries but no change in total compensation.⁶

Our analysis differs from these prior studies in several fundamental ways. First, our longer sample period, extending through 2021, allows us to identify adjustment patterns that were not apparent in the immediate aftermath of the TCJA and to mitigate concerns related to anticipatory effects surrounding the law’s discussion and enactment in 2017, as well as the initial uncertainty firms faced regarding its implementation.⁷ Looking over a longer horizon

⁶[Andreani, Ellahie, and Shivakumar \(2025\)](#) also study the effect of the TCJA on CEO compensation, but unlike us, they do not focus on changes in the deductibility of performance pay. Instead, they examine whether CEOs are rewarded for luck by analyzing one-off tax gains and losses related to the valuation of deferred tax assets and liabilities. Our results are complementary to theirs and remain robust when controlling for these one-off tax effects. Furthermore, our triple-differences specifications include firm-by-year fixed effects, which effectively control for any firm-level shocks, including one-off tax gains and losses.

⁷Uncertainty regarding the law’s implementation is reflected in the 2018 Pacific Premier’s proxy: “*Despite the Compensation Committee’s efforts to structure the executive team annual cash incentives and performance-based awards in a manner intended to be exempt from Section 162(m) and, therefore, not subject to its deduction limits, because of ambiguities and uncertainties as to the application and interpretation of Section 162(m) of the Code and the regulations issued thereunder, including the uncertain scope of the transition relief under the legislation repealing Section 162(m)’s exemption from the deduction limit, no assurance can be given that compensation intended to satisfy the requirements for exemption from Section 162(m) in fact will.*” Similarly, Zions Bancorporation’s April 19, 2018 proxy noted that “*We are still evaluating the*

also helps address a potential issue stemming from the TCJA’s *grandfather clause*, which allowed the deductibility of performance-based compensation to be retained if it was part of a written binding contract in effect prior to November 2, 2017.⁸ Second, we focus specifically on firms with high pre-TCJA performance-based pay and compare CEOs to non-top-five executives within the same firm-year, allowing us to better control for other provisions of the TCJA that could have affected firms on multiple dimensions. Third, following the existing literature on CEO compensation (Albuquerque, De Franco, and Verdi, 2013, Bizjak, Lemmon, and Naveen, 2008, Jayaraman, Milbourn, Peters, and Seo, 2021), our specifications include a rich set of firm-, CEO-, and industry-year fixed effects, aimed at controlling for the selection bias in firm-CEO matching, as well as taking into account the industry peer effects in CEO pay setting, while also implicitly accounting for macroeconomic conditions that vary across industries and over time. Fourth, our empirical set up explicitly addresses the known skewness in CEO total compensation, by using a log transformed measure of CEO pay, as well as by employing Poisson regressions. Fifth, none of our three identification strategies rely on firms’ fiscal-year-end dates, as prior research documents that fiscal-year timing is not random. In particular, firms with fiscal years ending in the first part of the year differ systematically from those with fiscal years ending in the latter part of the year in terms of size, risk, industry composition, trading activity, and performance characteristics (Smith and Pourciau, 1988, Huberman and Kandel, 1989, Dierker and Kim, 2005, Zhu, 2025). Finally, unlike prior work, we document increased CEO turnover following compensation adjustments among higher-ability CEOs, highlighting that expanded limits on deductibility

impact of this new law on our executive compensation practices.” Evidence of anticipatory effects appears in Cathay General Bancorp’s proxy filed on April 12, 2018: *“the enactment of the TCJA in December 2017 affected the 2017 grant cycle by (1) causing the Compensation Committee to increase the corporation’s tax deductions by awarding a portion of what would have otherwise been LTI in the form of bonuses to the CEO and the Executive Chair and (2) delaying a portion of the 2017 LTI award to 2018.”*

⁸Our results remain robust when estimated using a shorter time window (plus/minus 1-, and plus/minus 2 years) around the TCJA effective date.

can have significant labor market consequences.

III. Theoretical Framework

To motivate our empirical analysis, we develop a simple theoretical framework with moral hazard. The model incorporates the preferential treatment of performance-based pay and derives predictions for key variables of interest, such as performance-based pay, non-performance-based pay, and total CEO compensation, once the tax deductibility of pay is eliminated. We consider two scenarios: (1) the firm has only a single candidate for the CEO role; and (2) the firm can choose among candidates with varying abilities. The single-candidate case delivers baseline predictions for CEO pay, while the richer, multiple-candidate case generates additional implications for firm-CEO matching and CEO turnover, and examines how compensation adjustments relate to turnover.

A. Single CEO Type

We first consider the case in which the firm has only one candidate for the CEO position, who has to be hired both before and after the elimination of the tax deductibility for performance-based pay. This setup allows us to derive baseline predictions for the level and structure of CEO compensation but does not permit analysis of CEO turnover, since the participation constraint is always exactly met.

Suppose a risk-neutral principal (he) hires a risk-averse manager or CEO (she) to run the firm. The CEO is risk-averse and has exponential utility, $U(s) = -e^{-\rho(s-c(e))}$, where s represents compensation, e is effort, and $c(e) = \frac{ce^2}{2}$ is the cost of effort. The CEO's outside opportunities guarantee her a fixed income of $\bar{W}$ with no effort. We assume that effort is

unobservable and affects firm value V as follows:

$$V = ke + \varepsilon, \quad (1)$$

where ε is a random, normally distributed variable with zero mean and variance σ^2 . Following the contracting literature, we model the linear compensation contract:

$$s = w + bV, \quad (2)$$

where w is the fixed wage, and bV represents the amount of performance-based pay.

The principal maximizes firm value net of the after-tax expected compensation costs, subject to the incentive-compatibility and individual-rationality constraints for the CEO:

$$\max_{e, w, b} E[V - s + \tau bV], \quad (3)$$

$$e^* = \arg \max E[-e^{-\rho(s-c(e))}], \quad (4)$$

$$E[-e^{-\rho(s-c(e))}] \geq -e^{-\rho\overline{W}}, \quad (5)$$

where the last term in (3) represents the tax benefit associated with the CEO's performance-based pay that was present prior to the enactment of the TCJA but not afterwards, and τ is the firm's marginal corporate tax rate.⁹

The individual-rationality constraint for the CEO is binding, allowing us to solve for the fixed wage w

$$w = \overline{W} - bke + \frac{ce^2}{2} + \frac{\rho b^2 \sigma^2}{2}. \quad (6)$$

⁹For simplicity, we do not model the allowed deduction of \$1 million in compensation, though our conclusions would remain qualitatively similar if we did. We also abstract from individual income taxation, as it changed only minimally under the TCJA (the top marginal income tax rate decreased from 39% to 37%).

The CEO maximizes the certainty-equivalent of her compensation net of the cost of effort:

$$\max_e w + bke - \frac{\rho b^2 \sigma^2}{2} - \frac{ce^2}{2}, \quad (7)$$

which yields the simple expression for the optimal effort

$$e^* = \frac{bk}{c}. \quad (8)$$

Substituting compensation contract form (6) and optimal effort (8) into the objective function (3), simplifies the principal's problem to

$$\max_b \frac{bk^2}{c} + \frac{b^2 \tau k^2}{c} - \frac{b^2 k^2}{2c} - \frac{b^2 \rho \sigma^2}{2} - \bar{W}. \quad (9)$$

The solution of this optimization problem results in the following optimal compensation contract for the CEO and firm value:

$$b^* = \frac{k^2}{c\rho\sigma^2 + k^2(1 - 2\tau)}, \quad (10)$$

$$w^* = \bar{W} + \frac{k^4(c\rho\sigma^2 - k^2)}{2c(c\rho\sigma^2 + k^2(1 - 2\tau))^2}, \quad (11)$$

$$P \equiv E[V - s + \tau bV] = \frac{k^4}{2c(c\rho\sigma^2 + k^2(1 - 2\tau))} - \bar{W}. \quad (12)$$

After the TCJA, the tax deductibility of performance-based pay is eliminated, yielding the same solution as in equations (10)–(12), but with $\tau = 0$. The following proposition summarizes the resulting changes in the CEO compensation mix and level, as well as firm value.

Proposition 1. (No CEO Selection): *When the tax deductibility of performance-based pay is eliminated: (i) the amount of performance-based pay, $b^*E[V]$, and its share in total compensation, $b^*E[V]/E[s]$, decrease; (ii) expected total compensation, $E[s]$, decreases; (iii)*

firm value, P , decreases; and (iv) the effect on the fixed wage, w^ , is ambiguous. If $c\rho\sigma^2 \geq k^2$, the wage weakly decreases; otherwise, it increases.*

The intuition behind Proposition 1 is straightforward. When the tax deductibility of performance-based pay is eliminated, the firm has less incentive to use performance-based pay, since it is no longer tax-advantaged. Reducing this variable form of pay also lowers the required risk premium, resulting in lower total CEO compensation. The effect on the fixed wage, however, is ambiguous: when the CEO is highly risk-averse or the firm's performance is highly volatile (i.e., when $c\rho\sigma^2$ is large relative to k^2), the reduction in the risk premium dominates, and the firm decreases the fixed wage, otherwise it increases it. Finally, the loss of valuable tax deductions reduces firm value.

B. Multiple CEO Types

So far, we have assumed that the firm considers only one candidate for the CEO position. However, in practice, a firm may have access to a pool of potential candidates who vary in ability and possess different outside options. From our perspective, the key question is whether the tax deductibility of performance-based pay influences the type of CEO the firm selects and the corresponding compensation contract it offers.

To address this question, we modify the framework by allowing CEOs to have different abilities, represented by k_i , and different outside options, $\bar{W}_i$, where $i \in \{H, L\}$, $k_H > k_L$, and $\bar{W}_H > \bar{W}_L$. In general, when performance-based pay is no longer tax-deductible, the firm either employs the same type of the CEO as before, or switches from a more expensive (high-ability) type to a cheaper (low-ability) type. Hence, where there is no CEO turnover following the repeal of tax deductibility for performance-based compensation, the contract offered to the CEO is summarized in (10)-(11) and results of Proposition 1 apply.

Below, we consider the case with CEO turnover, which occurs when the firm's value under a tax advantage for performance-based pay (see equation (12)) is higher with a high-ability CEO than with a low-ability one, i.e., $P_{H,\tau} > P_{L,\tau}$, but this relation reverses in the absence of the tax advantage of performance-based pay, such that, i.e., $P_{H,0} < P_{L,0}$.

Proposition 2. *(CEO Selection): Suppose $P_{H,\tau} > P_{L,\tau}$ and $P_{H,0} < P_{L,0}$. When the tax deductibility of performance-based pay is eliminated: (i) the amount of performance-based pay decreases, $b_{L,0}^*E[V_{L,0}] < b_{H,\tau}^*E[V_{H,\tau}]$; (ii) expected total compensation decreases, $E[s_{L,0}] < E[s_{H,\tau}]$; and (iii) there is CEO turnover, with H-type CEOs leaving and L-type CEOs joining.*

Intuitively, the tax deductibility of performance-based pay allows firms to offer higher compensation and, as a result, to potentially employ higher-ability CEOs. Without it, these firms can no longer afford such CEOs and instead switch to cheaper alternatives. Interestingly, when there is CEO turnover, the reduction in total CEO compensation tends to be larger compared to cases without turnover. This occurs because, when a firm switches to a lower-ability CEO, there is less incentive to provide costly performance-based pay due to the CEO's lower productivity, and the CEO's outside options are also less lucrative.

IV. Data and Empirical Design

A. Sample Construction

We obtain detailed CEO compensation data, including performance-based pay, from the IncentiveLab database, which covers public U.S. companies with a market capitalization over \$1 billion, large international firms, and all U.S. companies that have appeared on the Fortune 750 list since 2004. Our initial sample includes 3,260 unique U.S. firms. In additional tests, we also use compensation data on 203 international firms. We define performance-

based pay as all compensation linked to a performance goal, as reported in IncentiveLab.¹⁰ Stock return data are from CRSP, corporate accounting data are from Compustat, and CEO characteristics are from BoardEx. Detailed variable definitions are provided in Appendix B.

Our sample period spans three years before and three years after the enactment of the Tax Cuts and Jobs Act of 2017, which became effective for firms with fiscal years beginning on or after January 1, 2018. Table IA.2 of the Internet Appendix lists key legislative events related to the passage of the TCJA. The relevant bill had been actively discussed since at least September 27, 2017, was introduced in Congress on November 2, 2017 (disclosing for the first time the proposed cap on the deductibility of performance-based executive pay) and was subsequently passed by the House and Senate, reconciled, and signed into law on December 22, 2017. To mitigate anticipatory effects in our setting, we exclude the three-month period prior to the TCJA’s effective date.¹¹ As a result, our sample includes firm-year observations with fiscal year ends from September 30, 2015 through November 30, 2021, excluding the period with fiscal year ends from September 30, 2018 to November 30, 2018.

Panel A of Table 1 reports summary statistics for the main variables in our sample. On average, firms report total assets of \$11.7 billion, a return on assets (ROA) of -2.6% , and leverage of 28.0% . More than 28% of firms report net operating losses in a given year, and CEO turnover occurs in 10.3% of firm-years. The mean (median) CEO compensation is \$7.0 million (\$5.0 million), with 41.4% of CEO pay classified as performance-based. Panels B and C show that, overall, all types of CEO compensation increase in the post-TCJA period, partly reflecting larger stock returns and a growing asset base.

¹⁰One advantage of using IncentiveLab data is that its definition of performance-based pay largely aligns with the definition of qualified performance-based compensation under Section 162(m). In contrast, studies that rely on ExecuComp data must make assumptions about how to classify stock option plans (some of which do not qualify under Section 162(m)), as well as restricted stock grants and various types of bonuses.

¹¹Our results are robust to including this three-month period, treating it as part of the pre-TCJA period.

B. Empirical Methodology

To investigate the impact of the TCJA’s repeal of exceptions to Section 162(m) on CEO compensation, we conduct difference-in-differences (DiD) and triple-differences analyses around the passage of the tax reform. Our baseline DiD estimation builds on the idea that firms with larger dollar amounts of performance-based pay stood to lose more in tax deductions upon the TCJA’s enactment and therefore had greater incentive to adjust their pay structures. Treated firms are identified as those with above-median performance-based pay in the period prior to the TCJA. Specifically, we calculate the average CEO performance-based pay during the three year period prior to the TCJA’s passage and classify firm-CEO pairs with above-median performance-based pay as treated. Firm-CEO pairs with below-median performance-based pay serve as the effective control group. Because the tax reform applies to the dollar amount of compensation, we use dollar values (rather than percentages of pay) to identify the treated group and estimate the model using Poisson regressions.¹² In the Internet Appendix, we show that our results are robust to using OLS regressions, where the dependent variables are the logs of the dollar values of compensation.

We carry out a DiD analysis using the following specification:

$$Y_{ijt} = \mu_{ij} + \delta_t + \beta \cdot Treated_{ij} \times Post_{it} + Z'_{ijt-1}\Gamma + \varepsilon_{ijt}, \quad (13)$$

where the indices i , j , and t refer to firms, CEOs, and years, respectively, and the unit of analysis is firm-CEO-year. Y_{ijt} is the dependent variable of interest (i.e., total compensation, performance pay, non-performance pay). In some specifications, the dependent variable is

¹²Performance-based pay is highly skewed in the data, with some firms not offering any as part of their executive compensation. [Cohn, Liu, and Wardlaw \(2022\)](#) and [Chen and Roth \(2024\)](#) recommend that researchers rely primarily on Poisson regressions when analyzing variables that are inherently non-negative and exhibit skewed distributions. They show that Poisson regressions produce unbiased and consistent estimates under standard conditions and accommodate separable fixed effects.

the relative share of performance pay in total compensation, in which case we estimate the model using OLS regressions. $Treated_{ij}$ is an indicator variable equal to one for firm-CEO pairs with above-median pre-TCJA performance-based pay (treatment group), and zero otherwise (control group). $Post_{it}$ is an indicator variable equal to one for firms with fiscal years starting on or after January 1, 2018, and zero in all other years in the sample. As noted above, we exclude the three-month period prior to the TCJA’s effective date, during which the legislation was actively discussed and voted on in the House and Senate.

Since the TCJA could have directly affected firm characteristics, our preferred specification excludes controls (see, e.g., [Baker, Larcker, and Wang \(2022\)](#)). However, because CEO compensation (and particularly performance-based pay) is strongly tied to performance and firm size ([Jensen and Murphy, 1990](#), [Baker and Hall, 2004](#), [Tervio, 2008](#), [Gabaix and Landier, 2008](#)), and because firms with net operating losses, deferred tax assets and liabilities, and high leverage could be differentially affected by the tax reform ([Andreani, Ellahie, and Shivakumar, 2025](#)), in some specifications we also include a set of control variables, X_{it-1} . This set consists of firm size (log of assets), firm performance measures (ROA and stock returns), leverage (debt-to-assets), an indicator for net operating losses, and net deferred tax liabilities normalized by assets. To address a potential concern that there is matching between firms who tend to have higher levels of performance pay and CEO type that might be driving our results, we include firm-CEO fixed effects, μ_{ij} . In this way, our main source of variation comes from tracking the same CEO-firm pair over time. In addition, the inclusion of firm-CEO fixed effects controls for time-invariant unobservable CEO characteristics, such as talent or risk preferences, that have been shown to explain a large part of the variation in CEO compensation ([Graham, Li, and Qiu, 2012](#)).

One potential concern with the baseline difference-in-differences specification (13) is that the TCJA was a comprehensive piece of legislation, sometimes described as a “Christmas

tree of provisions,” that likely affected firms not only through the repeal of the tax deduction for executive performance-based pay but also through other provisions of the tax law. To the extent that these other effects are correlated with the $Treated_{ij}$ variable, our estimates could be affected. Specifically, the TCJA lowered the statutory corporate income tax rate from 35% to 21%, which could have a larger positive effect on more profitable firms that faced higher marginal tax rate; limited interest deductions on debt, potentially affecting highly leveraged firms more negatively; eliminated net operating loss (NOL) carrybacks and limited NOL carryforwards, with a greater negative impact on firms with significant NOLs; and required firms to revalue their deferred tax assets and liabilities, with larger positive effects for firms with greater net deferred tax liabilities.

To address this concern, we use a more stringent triple-differences estimation strategy, relying on the fact that executives ranked below the top five in total compensation were unaffected by the repeal of the tax deduction. These executives were never subject to compensation deductibility limits under Section 162(m) and thus serve as a valid control group within the same firm. Specifically, we estimate the following triple-differences specification:

$$Y_{ijt} = \mu_{ij} + \gamma_{it} + \delta_{jt} + \beta \cdot Treated_{ij} \times CEO_{ijt} \times Post_{it} + Z'_{ijt-1}\Gamma + \varepsilon_{ijt}, \quad (14)$$

where the indices i , j , and t now refer to firms, executives, and years, respectively. The unit of analysis is the firm-executive-year, and the sample includes CEOs and executives ranked below the top five in total compensation.¹³ The variable CEO_{ijt} is equal to one if executive j is a CEO of firm i in year t . $Post_{it}$ and $Treated_{ij}$ are defined in the same way as before. We include the following fixed effects: $Firm \times Year$, $Year \times CEO$, and $CEO \times Treated$. Specifically,

¹³Because of the “once covered, always covered” principle, some executives below the top five may still be subject to compensation deductibility limits if they were ranked in the top five previously. Such cases are rare, and while we exclude these executives from the sample, including them does not affect the results.

$Firm \times Year$ fixed effects absorb all heterogeneity at the firm-year level, removing the effect of any factors that uniformly affect the compensation of CEOs and non-top five executives of the same firm, including other provisions of the tax reform that are not compensation-related. These fixed effects in particular control for any effect of the tax law on the firm through other provisions, that are not executive-specific, thus allowing us to use within-firm variation. $CEO \times Treated$ fixed effects absorb time-invariant heterogeneity in the differential pay between the CEOs of treated and control firms. Finally, $Year \times CEO$ fixed effects account for differential time trends in the pay of CEOs relative to other executives.¹⁴

Finally, we employ a third identification strategy: a DiD design that compares U.S.-incorporated firms (treatment group) with matched international firms (control group). This strategy addresses the concern that sorting firms into treatment and control based on pre-TCJA performance-based pay may introduce selection on unobservables, and that firms with different characteristics could be differentially affected by other TCJA provisions.

V. Impact of TCJA on Executive Compensation

A. Graphical Evidence on TCJA’s Impact

Figure 1 illustrates the evolution of CEO performance-based pay around the TCJA, covering the three years before and after the reform. Two key patterns emerge. First, performance-based pay in treated and control firms is statistically indistinguishable prior to the reform, supporting the parallel trends assumption underlying our baseline DiD strategy. Second, treated firms exhibit a marked decline in performance-based pay relative to control firms after the TCJA became effective, consistent with firms adjusting their compensation structures

¹⁴In additional tests, we include $Year \times CEO \times Industry$ fixed effects to further control for peer effects in executive pay and macroeconomic conditions that vary across industries and over time.

once the tax advantage was eliminated.

Figure 2 provides a complementary analysis, comparing changes in performance-based pay for CEOs with those for other highly paid executives within the same firm who were unaffected by the deductibility limits. This triple-differences approach shows that the decline in performance-based pay is concentrated among CEOs, rather than among unaffected top executives. However, error bars are generally wider than in the DiD setting, reflecting lower statistical power in this more granular comparison.

Finally, Figure 3 implements a third empirical strategy, comparing CEO performance-based pay trends for U.S.-incorporated firms (treatment group) with those for international firms matched on size and industry (control group). Again, we cannot reject that the pre-TCJA trends in performance-based pay are parallel across U.S. and international firms. Following the enactment of the TCJA, however, we observe a significant decline in CEO performance-based pay for U.S. firms relative to their international counterparts.

B. Baseline Difference-in-Differences Estimates

Our formal analysis begins with the estimation of the difference-in-differences specification outlined in equation (13), with results presented in Table 2. Columns 1–2 examine changes in CEO performance-based pay (defined as all compensation linked to a performance goal) following the TCJA. The coefficient on $Treated \times Post$ is negative and significant at the 1% level, indicating that performance-based pay for treated firms decreases by 42% (calculated as $e^{-0.545} - 1$) relative to control firms after the tax reform. The magnitude of the effect is only slightly reduced (to 38%) when control variables are included.¹⁵ In terms of the fraction of total CEO pay that is performance-based, we also observe a decline of 3.7 to 4.2

¹⁵We also verify that our results hold in samples of firms with improving accounting or stock return performance as well as those with declining performance.

percentage points. These results are consistent with the prediction of the model that firms reduce their reliance on performance-based pay once its tax deductibility is eliminated.

We next examine changes in non-performance-based CEO pay (defined as all compensation not linked to a performance goal). In this case, the model predicts that the effect of the tax reform is ambiguous. As shown in Columns 3 and 4, we find a negative but smaller effect: specifically, the dollar amount of non-performance-based pay decreases by 8–15%.

Finally, in the last two specifications, we focus on total CEO compensation, for which the model predicts a decline after the TCJA. Supporting this prediction, we find that total CEO pay decreases by approximately 17–23% following the tax reform. It is worth clarifying that the observed decline in both total CEO pay and performance-based pay is relative to control firms, as the overall period is characterized by an upward trend in compensation.

To illustrate this point, Table IA.3 of the Internet Appendix presents the results without the inclusion of year fixed effects, allowing for a separate estimation of the variable *Post*. The table shows that total CEO compensation is approximately 32–46% higher in the post-period for control firms, but only 15–24% higher for treated firms.

A possible alternative explanation for the observed effect of the TCJA on performance-based pay is that the passage of the tax reform signaled a change in the broader business environment and investment opportunities, potentially affecting companies' operations differently across industries. Furthermore, as noted by [Albuquerque, De Franco, and Verdi \(2013\)](#), [Bizjak, Lemmon, and Naveen \(2008\)](#), and [Jayaraman, Milbourn, Peters, and Seo \(2021\)](#), boards tend to structure CEO compensation contracts based on peer CEO pay, with peers often being selected from the same industry. To address these concerns, we re-estimate our baseline regressions with the inclusion of CEO-industry-year fixed effects. These fixed effects help control for peer effects and also implicitly account for macroeconomic conditions that vary across industries and over time. The results reported in Table IA.4 of the Internet

Appendix are very similar to those presented in Table 2.

One of the primary concerns for our identification strategy is that the TCJA may have affected firms through other channels, which could, in turn, have influenced the level and structure of executive compensation. For example, the reduction in the statutory tax rate from 35% to 21% and the expensing of qualified capital investments may have encouraged firms to increase investment (see, e.g., [Zwick and Mahon \(2017\)](#) and [Chodorow-Reich, Smith, Zidar, and Zwick \(2024\)](#) on the effects of taxes on investment), and changes in investment could subsequently affect the demand for executive incentives.¹⁶ These effects may be more pronounced for more profitable firms that were subject to the top marginal tax rates prior to the TCJA. Similarly, because the TCJA capped net interest deductions at 30% of EBITDA and changed the rules for carrybacks and carryforwards of net operating losses, it could have affected highly levered firms and firms with NOLs differently.

To account for the potential differential effects of the tax reform across firms, we include several additional fixed effects. Specifically, for each continuous firm characteristic (i.e., firm size, ROA, stock return, leverage, and net deferred tax liabilities), we create quartiles based on values in the year prior to the enactment of the tax reform and include year-by-quartile fixed effects for each characteristic in our regressions.¹⁷ Similarly, for net operating losses indicator, we include year-by-NOL indicator fixed effects. Table 3 reports these results. Overall, the estimated effects remain similar when these additional fixed effects are included, mitigating concerns that differential firm responses to other provisions of the law drive the observed effects on CEO pay. In the Internet Appendix (Table IA.6), we also show that results are similar when, instead of including higher-dimensional fixed effects, we split the

¹⁶To the extent that firms increased investment following the lower corporate tax rates introduced by the TCJA, we would expect them to use more (rather than less) CEO performance-based pay.

¹⁷In Table IA.5 of the Internet Appendix, we also show that our results are robust for directly controlling for the effect of one-off tax gains and losses related to the valuation of deferred tax assets and liabilities following [Andreani, Ellahie, and Shivakumar \(2025\)](#).

sample based on pre-TCJA firm characteristics such as income tax rate, foreign profits available for repatriation, firm size, or pre-TCJA CEO pay levels.¹⁸

C. Triple-Differences Estimates

To further strengthen our identification, we exploit the fact that the TCJA provision limiting the tax deductibility of performance-based pay applied only to the five highest-paid executives (the CEO, the CFO, and the three other most highly compensated officers), whereas other provisions of the tax reform, such as the reduction in the statutory tax rate and the limitation on interest deductibility, applied more broadly at the firm level. We therefore examine how CEO pay changed following the TCJA relative to that of executives ranked below top five in the same firm-year. As mentioned earlier, in these triple-differences specifications, we include $Firm \times Year$, $Year \times CEO$, and $Treated \times CEO$ fixed effects. As a result, all stand-alone effects, two-way interaction terms, and control variables that vary at the firm-year level are absorbed by fixed effects, leaving only the triple-differences estimate identified.

The results are reported in Table 4 and are consistent with those presented earlier, with the exception of the effect of the TCJA on non-performance-based pay, which is no longer statistically significant and for which the model does not offer a clear prediction. In terms of economic magnitude, CEO performance-based pay decreases by 32.6% relative to that of unaffected executives in the same firm, the share of performance-based pay in total compensation drops by 5.9%, and total pay decreases by 14.5%. These results help address concerns applicable to prior studies, such as [De Simone, McClure, and Stomberg \(2022\)](#) and [Luna, Schuchard, and Stanley \(2023\)](#), that the tax reform may have affected firms not only through the performance-based pay provision but also through other provisions, and that

¹⁸Additionally, in Table IA.7 of the Internet Appendix, we report results from propensity score matching, where firms are matched on industry (two-digit SIC code) and size (total assets).

changes in pay could be driven by those broader effects. To the extent that CEO and other executive pay respond similarly to tax-driven firm-level changes, our results are not subject to the same criticism.

D. Alternative Identification Strategy: Using International Firms

A possible concern with our baseline DiD strategy is that high-performance pay (*treated*) and low-performance pay (*control*) firms might differ based on some unobservable characteristics not accounted for using our rich set of fixed effects and controls. This could lead to the selection into treatment based on the unobservables affecting our estimates. To address this issue, in Table 5, we use an alternative identification strategy that leverages the fact that the TCJA applied only to U.S.-incorporated public firms, but not to firms incorporated in other countries. For these tests, we use compensation data on international firms from IncentiveLab. Because international firms in IncentiveLab are generally different from U.S. firms (in particular, they tend to be smaller), we apply propensity score matching with replacement based on firm size (total assets) and industry (two-digit SIC code) and compare trends in CEO pay between the matched international and U.S. firms. The results, reported in Table 5, show a similar pattern: both the performance-based pay of U.S. CEOs and the share of performance-based pay in total compensation decrease relative to their international counterparts and there is no significant effect on non-performance-based compensation.

E. Changes in Performance Metrics

Firm modifications to the types of performance-based pay used after the TCJA can shed light on which forms were primarily designed to take advantage of Section 162(m) tax deductions and which may have been employed for other reasons, such as aligning executives' interests with those of shareholders. To better understand these changes, here we examine

which metric groups experienced significant adjustments following the TCJA. The results are presented in Table 6, with Panel A reporting difference-in-differences estimates and Panel B showing triple-differences results. All specifications are estimated using Poisson regressions, and the dependent variable in each specification is the dollar amount of pay linked to a specific metric group.

We focus on four metric groups: short-term, long-term, accounting-based, and stock price-based performance pay. Short-term pay is tied to goals with a horizon of 12 months or less, while long-term pay is linked to goals that vest over a period longer than 12 months. Accounting-based goals refer to compensation tied to accounting outcomes (e.g., ROA exceeding 5%), while stock price-based pay involves goals linked to market performance metrics (e.g., stock return greater than 10%). These groups are not mutually exclusive. For example, pay could be linked to a short-term goal and an accounting-based goal at the same time.

Relative to the control group, treated-firm CEOs experience smaller declines in short-term (Column 1) and accounting-based (Column 3) performance pay, and larger declines in long-term (Column 2) and stock price-based (Column 4) performance pay. The differences in coefficients between short-term and long-term, and between accounting-based and stock price-based pay, are statistically significant in the DiD specification at the 1% level, and have p-values of 0.11 and 0.13, respectively, in the DDD specification.

Overall, these results are noteworthy given that Section 162(m) was often criticized for encouraging firms to adopt short-term, accounting-based, overly formulaic plans. Furthermore, it has been argued, from a theoretical perspective, that tying executive pay to short-term performance goals is more likely to induce manipulation of performance metrics (see, e.g., [Edmans, Gabaix, and Jenter \(2017\)](#)). If anything, however, we find that firms are more likely to reduce their reliance on long-term and stock-based compensation. One potential reason why these categories may be targeted first is that, when firms need to cut compensation,

they tend to focus first on components over which CEOs plausibly have less control, such as pay tied to stock price movements and long-term outcomes.

F. Heterogeneity in CEO Pay Adjustments

Given that the TCJA increased the cost of CEO talent for firms, it is interesting to examine which firms have a higher elasticity with respect to this cost. For example, it is plausible that financially constrained firms are more cost-sensitive in their demand for executive talent. We examine this conjecture next. Specifically, we adopt two measures of financing constraints widely used in the literature: whether the firm pays any dividends, following the seminal paper by [Fazzari, Hubbard, and Petersen \(1988\)](#), and the size–age index developed by [Hadlock and Pierce \(2010\)](#), which is based on qualitative information regarding a firm’s financial constraint status from financial statements. For both measures, we find that more financially constrained firms (i.e., those with a high size–age index or those that do not pay dividends) are the ones that cut CEOs’ performance pay the most once its deductibility is removed by the TCJA.

In contrast, we find that performance pay adjustments are smaller in magnitude for CEOs who have greater outside opportunities. We measure the latter using the general managerial skills index developed by [Custódio, Ferreira, and Matos \(2013\)](#), as general skills are more easily transferable across firms and industries.

VI. Labor Market Effects

A. CEO Turnover Following TCJA

We next examine whether the elimination of the tax deductibility of performance-based executive pay affects not only the level and structure of compensation but also the broader

executive labor market. Specifically, the model shows that some firms may prefer to replace higher-ability CEOs with lower-ability ones because they can no longer afford to retain the former. In essence, tax deductions for executive compensation implicitly enabled firms to pay more; once these deductions are removed, firms must grapple with how to retain executives who have become more expensive on an after-tax basis.

This argument implicitly assumes that CEOs, especially more able ones, have credible outside opportunities even post-TCJA, whether by moving to private firms, joining international companies, or taking highly paid positions in other industries (e.g., hedge funds, private equity, venture capital). When firms face a higher effective cost of retaining top talent, and when that talent has valuable alternatives, substitution toward lower-ability executives becomes more likely.

To test this implication empirically, we turn to CEO turnover outcomes. Table 8 presents the results of the CEO turnover analysis, where the dependent variable equals one if there is CEO turnover in a given year and zero otherwise.¹⁹ In columns 1 and 2, we interact $Treated \times Post$ with an indicator for *High Stock Return* during the three-year period prior to the passage of the TCJA. The idea is that higher-ability CEOs are more likely to generate superior firm performance, so stock returns serve as a useful proxy for unobserved managerial ability. Similarly, in columns 3 and 4, we use *High ROA* during the three-year period prior to the TCJA as an alternative proxy for managerial ability.

Consistent with the broader literature on CEO turnover, we find that firm performance, measured by either stock returns or the firm’s ROA, is negatively related to the probability of turnover. CEO turnover also increases with firm size, potentially because larger firms are

¹⁹We focus on total CEO turnover for two main reasons. First, the model does not explicitly distinguish between forced and voluntary turnover. Second, data on forced CEO turnover from [Peters and Wagner \(2014\)](#) are available only for part of our sample period. Using their data, we verify that our results are driven by voluntary turnover.

more likely to search for better-matched CEOs. Regarding the impact of the TCJA, column 1 shows a negative estimate on $Treated \times Post$, implying that, post-TCJA, CEO turnover decreases by 3.5% for treated firms with lower-ability CEOs. The key finding, however, is that CEO turnover increases for treated firms with higher-ability CEOs. Specifically, treated firms with high stock returns experience a 2.5% ($= 6.0\% - 3.5\%$) higher likelihood of CEO turnover relative to control firms post-TCJA. We generally find similar but statistically weaker results when we use high ROA to proxy for managerial ability.

In columns 5 and 6 we examine the relation between the probability of CEO turnover and the costs/benefits of their outside opportunities. Existing literature suggests that non-compete agreements (NCAs) shape the behavior of executives by raising their personal cost of displacement. For example, [Garmaise \(2011\)](#) shows that NCAs reduce the likelihood of top executives switching jobs, primarily by decreasing the number of transitions to similar positions within the same industry. He also finds that stronger enforceability of NCAs is linked to lower overall executive compensation. [Ertimur, Rawson, Rogers, and Zechman \(2018\)](#) find that non-compete constraints lead to employment gaps more often for specialist CEOs than for generalist CEOs. Using data on the state-level changes in the enforceability of CEO non-compete agreements from [Bai, Eldemire, and Serfling \(2024\)](#), we find that the increase in CEO turnover is concentrated in states with weaker enforceability of non-compete agreements, where it is easier for CEOs to move.

The results in Table 8, showing that turnover increases among higher-ability CEOs, are consistent with the predictions of the model (see Proposition 2). Intuitively, the removal of tax deductions for performance-based pay increases the after-tax cost of hiring a CEO, making it unaffordable for some firms to retain the CEOs they employed prior to the TCJA and prompting a switch to less expensive alternatives.

The labor market consequences we document reveal a more balanced view of tax-motivated

compensation distortions. While firms benefited from tax advantages under Section 162(m), they created employment arrangements that proved unstable once TCJA eliminated these benefits. This suggests that tax policies can have unintended consequences that extend far beyond their direct effects on compensation structure. Rather than simply influencing pay levels or components, tax incentives can distort the matching between executives and firms, creating employment matches that depend on tax benefits for their stability.

B. Do New CEOs Receive Lower Pay?

The differential impact of the TCJA on CEO turnover across skill levels suggests that tax-motivated compensation arrangements created distortions in the CEO labor market and affected firm-CEO matching, with some firms letting go of higher-ability CEOs. Here, we test a related prediction that emerges from the model, namely, that firms replaced departing higher-ability CEOs with less expensive successors. Specifically, we examine whether the decreases in CEO performance-based pay and total compensation are more pronounced following the TCJA in cases where CEO turnover occurs during the post-reform period.

Table 9 presents these results. Consistent with earlier findings, we observe that both performance-based pay and total CEO compensation decrease following the TCJA. However, we also find an additional effect on compensation when there is CEO turnover. For example, based on specification (1), firms reduce CEO performance-based pay by 42.1% ($= e^{-0.547} - 1$) post-TCJA, with an additional 12.9% ($= e^{-0.138} - 1$) reduction when turnover occurs. Similarly, the base effect of the tax reform on total CEO compensation is -24.0%, with an additional decline of 13.1% associated with CEO turnover.

These findings significantly advance our understanding of how tax policy affects executive compensation. While previous research has focused primarily on average effects across firms, our analysis reveals that compensation adjustments following the repeal of tax deductibility

of executive pay were substantially more pronounced in cases involving CEO turnover. In the context of the model, these results suggest that, following the elimination of tax deductions, some firms could no longer afford to retain higher-ability CEOs and instead switched to less expensive counterparts. In turn, incentivizing lower-ability CEOs became less important for firm value generation, so that firms reduced their reliance on performance-based pay.

These results highlight how tax policy can interact with executive labor markets in subtle but important ways. This insight has important implications for policy design, suggesting that attempts to influence compensation structure through tax incentives may also create unintended distortions in the executive labor market.

VII. Stock Market Reaction

In addition to the effects of the TCJA on CEO pay and turnover, the model also predicts that the loss of tax deductibility of performance-based executive compensation has negative implications for firm value, provided that other effects of the tax reform, such as lowering of the statutory tax rates, are accounted for.

To investigate the firm value implications of the loss of tax deductibility for performance-based pay, we calculate abnormal stock returns on the date the TCJA was first introduced in Congress (November 2, 2017). Estimating firm value responses to specific provisions of a broad tax reform is challenging because of possible anticipation effects (see, e.g., [Borochin, Celik, Tian, and Whited \(2022\)](#)). We focus on November 2 because it marked the first time that changes to the deductibility of performance-based pay were explicitly discussed and made public, thereby minimizing concerns about anticipation.²⁰ For example, the tax bill proposal disclosed in the news on September 27, 2017, did not mention changes to the

²⁰Because the bill's introduction did not guarantee its passage, our estimates should be interpreted as a lower bound. Including a longer run-up window, such as (-1,0) or (-3,0), yields similar results.

treatment of executive compensation.²¹ Focusing on November 2, 2017, also has the added benefit that investors’ assessments of other provisions in the tax bill had, at least partially, already been incorporated into stock prices.

For our tests, we use CEO performance-based pay in the year prior to the TCJA’s enactment as a continuous variable and also construct a decile rank (1–10), with higher values indicating greater performance-based pay. We calculate abnormal returns using the Fama-French-Carhart four-factor model and regress them on the performance pay variables, along with a base set of firm-level control variables (measured in the year before the TCJA’s enactment). We also control for the corporate tax rate, measured as taxes paid (net of special items) divided by pretax income, since prior work finds that high-tax firms gained more on the bill’s release date (Wagner, Zeckhauser, and Ziegler (2018)).

The results are presented in Table 10. We find a negative and statistically significant relation between CEO performance-based pay (or its rank) and abnormal returns to the news about the TCJA and the elimination of the tax deductibility for executive performance-based pay. For example, based on columns 1 and 2, the results suggest that a one standard deviation increase in CEO performance-based pay is associated with a 21 to 25 bps lower abnormal return in response to the TCJA announcement. Likewise, the effect of a one-decile increase in performance-based pay corresponds to a 9 to 11 bps reduction in the cumulative abnormal return (CAR). In terms of market capitalization, the median firm in our sample was worth \$10.5 billion in the year prior to the TCJA. A 21 basis point decrease in firm value, as shown in Column 2, corresponds to a \$22 million decline in market capitalization.²² The fact that

²¹See, e.g., “Details of GOP tax reform framework revealed,” published on September 27, 2017, by CN-NMoney. Moreover, votes on the bill in the House and Senate were largely anticipated, given Republican majorities in both chambers.

²²We estimate that, for the average firm in our sample, the elimination of the tax deduction for executive performance-based pay results in approximately \$1.5 million in additional corporate income tax per year. Using a discount rate of 7% and a 30-year horizon, this implies a present value loss of roughly \$19 million—comparable to the observed market reaction.

the results are robust to using quantiles of performance-based pay also mitigates concerns that they are driven by extreme values.²³

Overall, the results indicate that the stock market recognized the value of the tax deductibility and anticipated that firm values would decline following its removal. Firms with more performance-based pay were more negatively affected than those with less or none.

VIII. Robustness Tests

A. Subsample Evidence

To examine whether our compensation results could be driven by provisions of the TCJA other than the performance-pay change, we split the sample based on several firm characteristics that affect exposure to the reform. Specifically, we sort firms by their pre-TCJA corporate income tax rate, since high-tax-rate firms may have benefited more from the reduction in the statutory rate. We also sort firms by the amount of foreign profits, as the TCJA facilitated profit repatriation. Finally, we sort firms by size (assets) and by the level of total CEO pay prior to the TCJA. Table IA.6 (Panels A–D) of the Internet Appendix reports these results and shows that our findings are not driven by any particular subsample, reducing the likelihood that another provision of the law explains the observed effects.

Another possible concern is that when we estimate triple-difference specifications, we necessarily restrict the sample to firms that report compensation for executives below the top five, and it is possible that these firms differ from those in the main sample.²⁴ We therefore run our difference-in-differences tests separately for firms reporting compensation on exactly

²³We also verify that results are similar if we remove firms in the top 1% of performance-based pay from specifications 1–2 or exclude decile 10 from specifications 3–4.

²⁴In unreported results, we find that the main predictor of reporting compensation for executives below the top five is firm size, consistent with the stylized fact that large firms tend to provide more detailed disclosure.

five executives and for firms reporting compensation on more than five executives (see Panel D of Table IA.6). In general, the estimated effects are similar across both sets of firms, with slightly larger magnitudes for firms that report data only on the five NEOs (the minimum required), particularly for total compensation. Because firms that disclose compensation for additional executives tend to be larger and therefore less sensitive to executive compensation costs, any selection into the triple-difference sample likely biases us against finding significant effects, making the consistency of the results across samples reassuring.

B. Propensity Score Matching

One potential criticism of our empirical setting is that treated and control firms may differ in terms of firm size, and that firms of different sizes may exhibit different trends in CEO pay. While our baseline specifications include firm fixed effects (and Table 3 additionally includes firm size-by-year fixed effects), we further address this concern in Table IA.7 of the Internet Appendix, where we replicate our main tests after matching treated and control firms on industry (two-digit SIC code) and firm size (total assets). The matching is performed with replacement in the year prior to the TCJA, and firms are not different in terms of size after the match.

Table IA.7 presents the replication of our main analysis. In our baseline results (Table 2, Columns 1 and 7), the coefficient on $Post \times Treated$ is -0.545 for performance-based pay and -0.256 for total CEO compensation. In the PSM-matched samples (Table IA.7, Columns 1 and 7), the corresponding coefficients are similar in magnitude (-0.630 and -0.188 , respectively). This indicates that, when matching on firm size, firms with high levels of performance-based pay significantly reduce such pay and total pay following the elimination of the tax deduction previously allowed under Section 162(m).

C. Alternative Log-Specifications

Additionally, in Table IA.8, we show that our results are robust to using OLS regressions instead of the Poisson model. In these regressions, the dependent variables are the logs of the dollar values of CEO performance-based compensation, non-performance-based pay, and total compensation, respectively, and are defined only for observations with positive compensation.²⁵

D. Quantile Regressions

Finally, given that CEO compensation, and particularly performance pay is highly skewed in the data, raising concerns that extreme observations might influence inference, we follow [Guthrie, Sokolowsky, and Wan \(2012\)](#) and implement quantile regressions,²⁶ which are considerably less sensitive to outliers. These results, reported in Table IA.9, are similar to their OLS counterparts, mitigating concerns that our findings are driven by a few extreme values. Moreover, the results are consistent across quantiles (25th, 50th, 75th), with somewhat larger negative adjustments in performance-based pay for firms that rely more heavily on it.

E. Excluding Covid, Removing CEO Turnover Firms, Continuous Treatment, and Short Event Window

Here we address potential remaining concerns and conduct additional robustness tests.

First, the post-period in our study includes an unusual time span potentially affected by the onset of the COVID-19 pandemic. During this period, CEO compensation may have been cut for reasons unrelated to the TCJA. Our tests compare treated and control

²⁵Total compensation is positive for all firm-CEO-year observations in the sample, while performance-based compensation equals zero in approximately 6% of cases.

²⁶Results are also robust to excluding outliers from the sample (e.g., those above the 99th percentile).

firms in the DiD specifications and, in addition, compare CEOs to unaffected executives within the same firm in the DDD specifications. For the pandemic to explain our results, it would therefore have to be the case that treated firms experienced different trends in executive pay during the pandemic and that these trends also differed between CEOs and other executives within the same firm. Nevertheless, to further alleviate this concern, we exclude all observations with fiscal year ends in 2020 or later and reestimate the results. Panel A of Table IA.10 presents these findings. In general, for both DiD and DDD specifications, we observe coefficient estimates that are similar to those in our main tests reported in Tables 2 and 4. For example, in column 1 of Panel A, the coefficient on $Treated \times Post$ is -0.481 , compared to -0.545 in the corresponding specification in Table 2.

Second, given that recorded CEO pay may look unusual in years with CEO turnover (e.g., covering only part of the year or including signing bonuses), we reestimate our specifications after excluding all firms with CEO turnover during the sample period. The results reported in Panel B are very similar to those in Tables 2 and 4, with the exception that the effect on total compensation is not significant in specification 8 that uses triple-differences.

Third, instead of defining treated and control firms in a binary manner, we use a continuous treatment variable based on the level of the CEO’s performance-based pay in the year prior to the TCJA. The results in Panel C of Table IA.9 are remarkably similar to those reported previously, although somewhat smaller in magnitude: a one-standard deviation increase in the treatment variable is associated with roughly an 18% reduction in CEO performance pay post-TCJA. The advantage of a continuous measure is that it can incorporate more information, but the drawback is that it relies on stronger identifying assumptions than parallel trends (see, for example, [Callaway, Goodman-Bacon, and Sant’Anna \(2024\)](#)). For this reason, we do not use it as our main specification and report it only as a robustness check.

Finally, we reestimate our results using a short event window of $[-1,+1]$ years around the TCJA’s passage instead of $[-3,+3]$. The potential advantage of using a shorter window is that there is less chance that confounding events unrelated to the TCJA affect the results. The disadvantage, however, is that executive pay is typically sticky and difficult to change instantaneously, that the TCJA’s grandfathering provision allowed firms to delay pay adjustments, and that in the first year post-TCJA firms faced uncertainty about how the law would be interpreted and enforced with respect to the deductibility of executive compensation, making them reluctant to change pay. Panel D of Table IA.10 presents these results. In general, with the exception of specification 8, we observe very similar results when using the shorter window, although the magnitudes of pay changes are naturally smaller.²⁷ These results underscore that our main differences from [De Simone, McClure, and Stomberg \(2022\)](#) for performance pay stem from differences in identification strategies rather than from the length of the event window.

F. Placebo Tests

To further assess the validity of our identification strategy, we implement two placebo tests. In the first, we randomly assign treatment status to firms in a way unrelated to the TCJA, assuming that firms with an odd GVKEY are treated. Reassuringly, these placebo tests, reported in Panel A of Table IA.10, do not yield significant results.

In the second placebo test, we use non-executive employee performance-based pay as the dependent variable. While employee pay may be influenced by similar factors as CEO pay, its tax treatment was unaffected by the TCJA, making it a reasonable counterfactual. As a proxy for non-executive performance-based pay, we use the logarithm of the value of all stock

²⁷The magnitudes become very similar to our baseline results if we use a window of $[-2,+2]$ years, including those in specification 8.

options granted to employees (excluding those granted to the top five executives), divided by the number of employees. These regressions, reported in Panel B of Table IA.11, also provide no evidence of spurious effects.

IX. Conclusion

We show that tax policy can significantly influence executive compensation design and create distortions in the executive labor market. Motivated by a simple theoretical framework that examines how tax deductibility of performance-based pay influences CEO selection and optimal compensation design, we analyze firms' responses to the Tax Cuts and Jobs Act of 2017, which eliminated the tax advantage of performance-based pay over fixed pay and expanded the scope of the \$1 million deductibility limit. We find that many firms had maintained high levels of performance-based pay, at least partly because of tax benefits, with treated firms showing a 32.6% smaller increase in performance-based pay after the TCJA. The targeted nature of these adjustments, which occur in performance based components without corresponding changes to fixed compensation, strongly suggests that firms were unwinding previously tax driven compensation arrangements. We also show significant heterogeneity in firms' responses to the increased cost of CEO talent under the TCJA, with financially constrained firms showing greater sensitivity to the after-tax cost of executive compensation.

The unwinding of these tax-motivated pay structures also triggers significant disruptions in the executive labor market. Consistent with the model, we find that the loss of compensation deductibility prompts treated firms to offer lower CEO compensation. As a result, CEO turnover increases among treated firms with higher-ability CEOs (proxied by higher stock returns). Specifically, treated firms with high stock returns experience a 2.5% higher likelihood of CEO turnover relative to control firms following the TCJA. This increase in

turnover is concentrated in states with weaker enforcement of non-compete agreements, consistent with the idea that tax-motivated CEO departures are more likely when executives face lower personal costs of transition. We further find that firms tend to replace their departing higher-ability CEOs with less expensive successors.

This pattern of increased CEO turnover among higher-ability executives echoes the argument by [Murphy and Jensen \(2018\)](#) that regulatory interventions may have unintended consequences and impose significant costs on firms. In line with this view, we also find that the removal of tax deductibility for performance-based pay has negative implications for firm value, when controlling for other provisions of the tax reform. Specifically, we document a negative and statistically significant relation between the share of CEO performance-based pay and abnormal stock returns in response to news about the TCJA’s repeal of performance-based pay deductibility, with the average firm experiencing a \$17 million decline in value.

Overall, our findings provide novel evidence that tax policy can distort the design of executive compensation. On the one hand, we find that eliminating the unequal tax treatment of different forms of pay (i.e., the removal of the tax deductibility of performance-based pay) prompts firms to readjust their compensation structures and move toward a different pay mix. This suggests that many firms had previously maintained inefficiently high levels of performance pay primarily to capture tax benefits. On the other hand, the expansion of the \$1 million deductibility limit increases the after-tax cost of executive compensation, prompting firms to reduce CEO pay and resulting in significant negative consequences for executive retention. These results underscore the importance of considering how tax policy may generate unintended consequences, particularly when tax advantages encourage firms to adopt structures that would not be chosen on economic grounds alone.

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Appendix A. Proofs

Proof of Proposition 1. (i) Using expressions (2), (8), and (10), we can find the expected value:

$$E[V] = ke^* = \frac{b^*k^2}{c} = \frac{k^4}{c(c\rho\sigma^2 + k^2(1 - 2\tau))}. \quad (15)$$

We can calculate the amount of performance-based pay and its proportion in total pay as follows:

$$b^*E[V] = \frac{k^6}{c(c\rho\sigma^2 + k^2(1 - 2\tau))^2}, \quad (16)$$

$$\frac{b^*E[V]}{E[s]} = \frac{2k^6}{2c\bar{W}(c\rho\sigma^2 + k^2(1 - 2\tau))^2 + k^4(c\rho\sigma^2 + k^2)}. \quad (17)$$

When $\tau = 0$ in the formulas above, both $b^*E[V]$ and $\frac{b^*E[V]}{E[s]}$ decrease.

(ii) Similarly, we can use (2) to find the total expected compensation:

$$E[s] = w^* + b^*E[V] = \bar{W} + \frac{k^4(c\rho\sigma^2 + k^2)}{2c(c\rho\sigma^2 + k^2(1 - 2\tau))^2}. \quad (18)$$

When the tax subsidy is repealed, i.e., when $\tau = 0$ in the formula above, we can see that $E[s]$ decreases by

$$E[s_\tau] - E[s_0] = \frac{2\tau k^6}{c(c\rho\sigma^2 + k^2(1 - 2\tau))(c\rho\sigma^2 + k^2)} > 0. \quad (19)$$

(iii) Firm value is the principal's value net of compensation costs, $P \equiv E[V - s + \tau bV]$, and it is given in (12). When the tax subsidy is repealed, firm value decreases by

$$P_\tau - P_0 = \frac{\tau k^6}{c(c\rho\sigma^2 + k^2(1 - 2\tau))(c\rho\sigma^2 + k^2)} > 0. \quad (20)$$

(iv) Finally, the effect of the tax subsidy on the fixed wage, w^* , is ambiguous because the numerator in the second term of (11) can be either positive or negative. $\square$

Proof of Proposition 2. Given our assumptions, the firm switches from a high-ability CEO to a low-ability CEO following the repeal of the tax subsidy. The CEO's performance-based component of the contract then changes from $b_{H,\tau}^* = \frac{k_H^2}{c\rho\sigma^2 + k_H^2(1-2\tau)}$ to $b_{L,0}^* = \frac{k_L^2}{c\rho\sigma^2 + k_L^2}$, resulting in a decrease

in the amount of performance-based pay by

$$b_{H,\tau}^* E[V_{H,\tau}] - b_{L,0}^* E[V_{L,0}] = \frac{(k_H^6 - k_L^6) c \rho^2 \sigma^4}{(c \rho \sigma^2 + k_L^2)^2 (c \rho \sigma^2 + k_H^2 (1 - 2\tau))^2} \quad (21)$$

$$+ \frac{(k_H^2 - k_L^2) (k_L^2 k_H^2 + 2c \rho \sigma^2 (k_H^2 + k_L^2)) k_L^2 k_H^2}{c (c \rho \sigma^2 + k_L^2)^2 (c \rho \sigma^2 + k_H^2 (1 - 2\tau))^2} + \frac{4\tau k_L^6 k_H^2}{c (c \rho \sigma^2 + k_L^2)^2 (c \rho \sigma^2 + k_H^2 (1 - 2\tau))}.$$

Because $k_H > k_L$ and $\tau > 0$, the expression above is positive; i.e., $b_{L,0}^* E[V_{L,0}] < b_{H,\tau}^* E[V_{H,\tau}]$. Note that if $k_L = k_H = k$ (i.e., there is no CEO turnover), then the first two terms above are zero, implying that the decrease in the amount of performance-based pay is larger with CEO turnover. Similarly, one can show that the total expected compensation declines by

$$E[s_{H,\tau} - s_{L,0}] = \overline{W}_H - \overline{W}_L + (k_H^2 - k_L^2) \frac{(k_H^2 k_L^2 + (k_H^2 + k_L^2) c \rho \sigma^2) (c \rho \sigma^2 + k_H^2)}{2c (c \rho \sigma^2 + k_L^2) (c \rho \sigma^2 + k_H^2 (1 - 2\tau))^2}$$

$$+ \frac{2\tau k_H^2 k_L^4}{c (c \rho \sigma^2 + k_L^2) (c \rho \sigma^2 + k_H^2 (1 - 2\tau))}. \quad (22)$$

Note that if $k_L = k_H = k$ and $\overline{W}_L = \overline{W}_H = \overline{W}$ (i.e., there is no CEO turnover), then the first two terms proportional to $(\overline{W}_H - \overline{W}_L)$ and $(k_H^2 - k_L^2)$ are zero, implying that the decrease in the total pay is larger with CEO turnover. Finally, CEO turnover occurs because once the firm switches from offering the contract $(w_{H,\tau}, b_{H,\tau})$ to $(w_{L,0}, b_{L,0})$, the individual-rationality constraint of the high-ability CEO is no longer satisfied. $\square$

Appendix B. Variable Definitions

<i>Variable Name</i>	<i>Description</i>
<i>Post</i>	An indicator variable equal to one for firm fiscal years beginning on or after January 1, 2018, and zero otherwise.
<i>CEO</i>	An indicator variable equal to one if a given executive is a firm's CEO in a given year, and zero otherwise.
<i>Treated</i>	An indicator variable equal to one if a firm's CEO has above-median performance pay prior to the TCJA (during 2013-2016), and zero otherwise.
<i>Total Pay</i>	Total annual compensation in \$000s.
<i>Performance Pay</i>	All compensation linked to a performance goal in \$000s.
<i>Non-Performance Pay</i>	All compensation not linked to a performance goal in \$000s.
<i>%Performance Pay</i>	Performance pay scaled by total annual pay.
<i>ST Performance Pay</i>	Total pay linked to a short-term (less than/equal to 12 months) goal.
<i>LT Performance Pay</i>	Total pay linked to a long-term (more than 12 months) goal.
<i>Accounting-Based Performance Pay</i>	Total pay linked to an accounting performance goal.
<i>Stock-Based Performance Pay</i>	Total pay linked to a stock price/market performance goal.
<i>Firm Size</i>	The natural logarithm of firm's total book assets.
<i>Stock Return</i>	Firm's stock return over its fiscal year.
<i>ROA</i>	Net income scaled by total book assets.
<i>Leverage</i>	The sum of short- and long-term debt scaled by total book assets.
<i>CEO Turnover</i>	An indicator variable equal to one if there is a CEO turnover during a firm's fiscal year, and zero otherwise.
<i>NDTL</i>	Deferred tax liabilities minus deferred tax assets divided by the book value of assets.
<i>NOL</i>	A dummy variable equal to one if the firm has net operating loss (pretax income is negative), and zero otherwise.
<i>Tax Rate</i>	Ratio of taxes paid, net of special items, to pretax income.
<i>Treated (Placebo)</i>	An indicator variable equal to one if a firm's GVKEY is odd, and zero otherwise.
<i>Log(Option Grants/Employee)</i>	Logarithm of the value of all stock options granted to employees, excluding those granted to top five executives, divided by the number of employees.

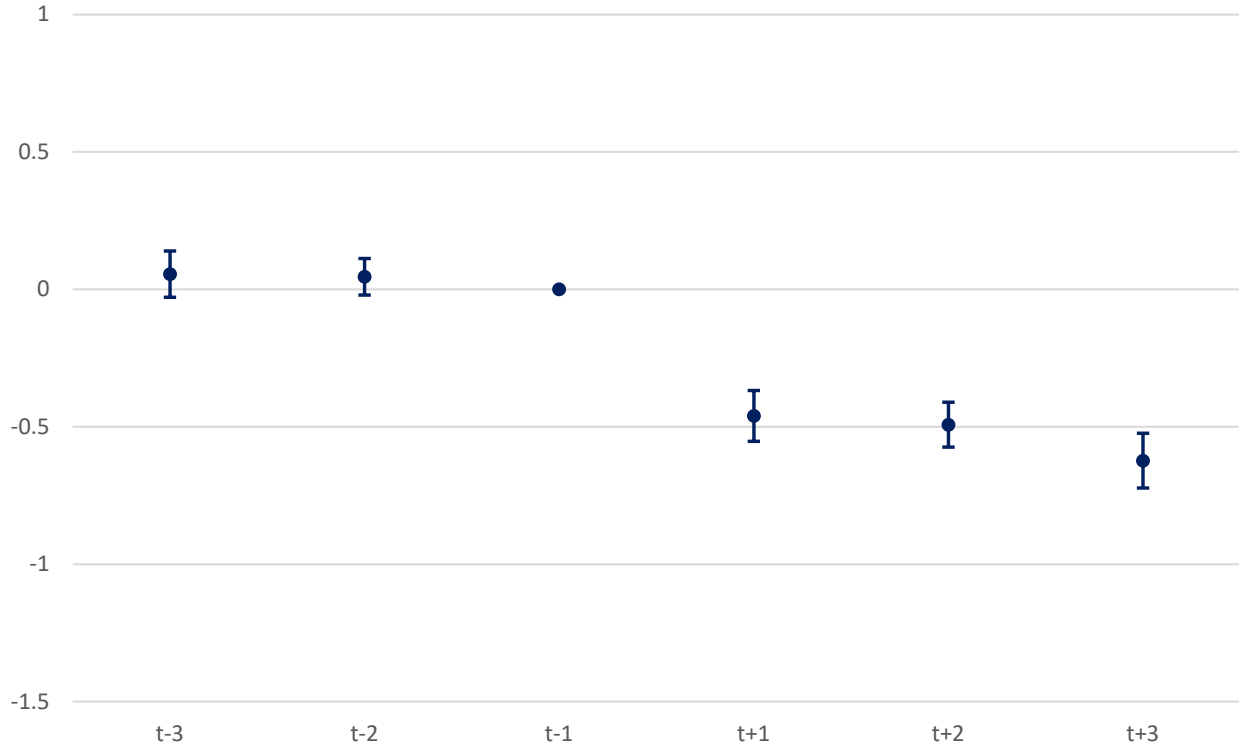


Figure 1. CEO Performance Pay Around TCJA (Difference-in-Differences). This figure reports the effect of TCJA on CEO performance-based pay. The sample comes from Incentive Lab, includes firms' CEOs, and covers the period with fiscal year ends from September 30, 2015 to November 30, 2021, excluding the three-month period prior to the TCJA's effective date (January 1, 2018). Performance-based pay is regressed on year indicator variables interacted with treatment indicator. The model includes CEO-firm fixed effects and is estimated using Poisson model. The year prior to the law's enactment serves as the baseline year to which all other years are compared. The y-axis plots the coefficient estimates on each year indicator. The x-axis shows the year relative to the TCJA effective year. The blue error bars illustrate the 95% confidence intervals of the coefficient estimates, based on standard errors clustered at the firm level.

Alt text: The figure presents an event-study of CEO performance-based pay around the Tax Cuts and Jobs Act, comparing firms with high and low pre-TCJA levels of performance pay. Estimated coefficients are plotted by year relative to the TCJA effective date, with the pre-enactment year serving as the benchmark. Post-TCJA coefficients are all negative and statistically significant at the 95% confidence level, indicating declines in performance-based pay.

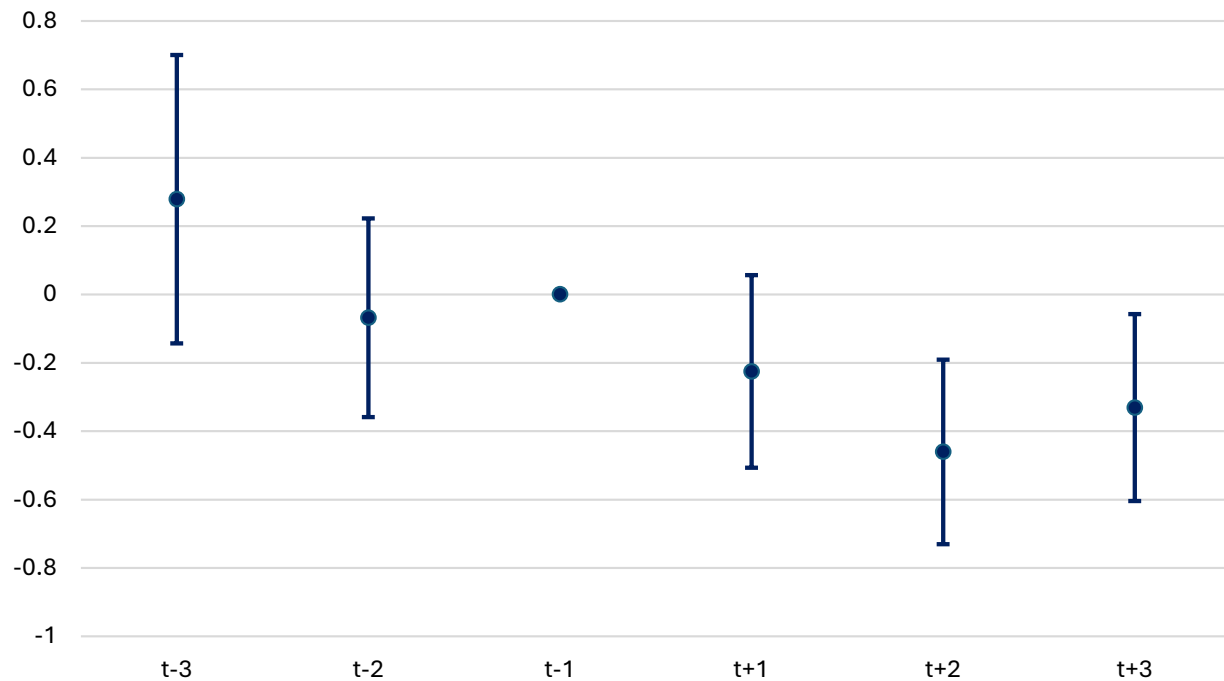


Figure 2. CEO Performance Pay Around TCJA (Triple Differences). This figure reports the effect of TCJA on CEO performance pay. The sample comes from Incentive Lab, includes firms' CEOs as well as other executives ranked below top five in terms of total compensation, and covers the period with fiscal year ends from September 30, 2015 to November 30, 2021, excluding the three-month period prior to the TCJA's effective date (January 1, 2018). Performance pay is regressed on year indicator variables interacted with treatment indicator and CEO indicator. The model includes firm-year fixed effects and is estimated using Poisson model. The year prior to the law's enactment serves as the baseline year to which all other years are compared. The y-axis plots the coefficient estimates on each year indicator. The x-axis shows the year relative to the TCJA effective year. The blue error bars illustrate the 95% confidence intervals of the coefficient estimates, based on standard errors clustered at the firm level.

Alt text: The figure displays a triple-differences event-study of CEO performance-based pay around the Tax Cuts and Jobs Act, using other executives within the same firm-year as a comparison group. Estimated coefficients are plotted by year relative to the TCJA effective date, with the pre-enactment year serving as the benchmark. Post-TCJA coefficients are all negative and most are statistically significant at the 95% confidence level, indicating declines in performance-based pay.

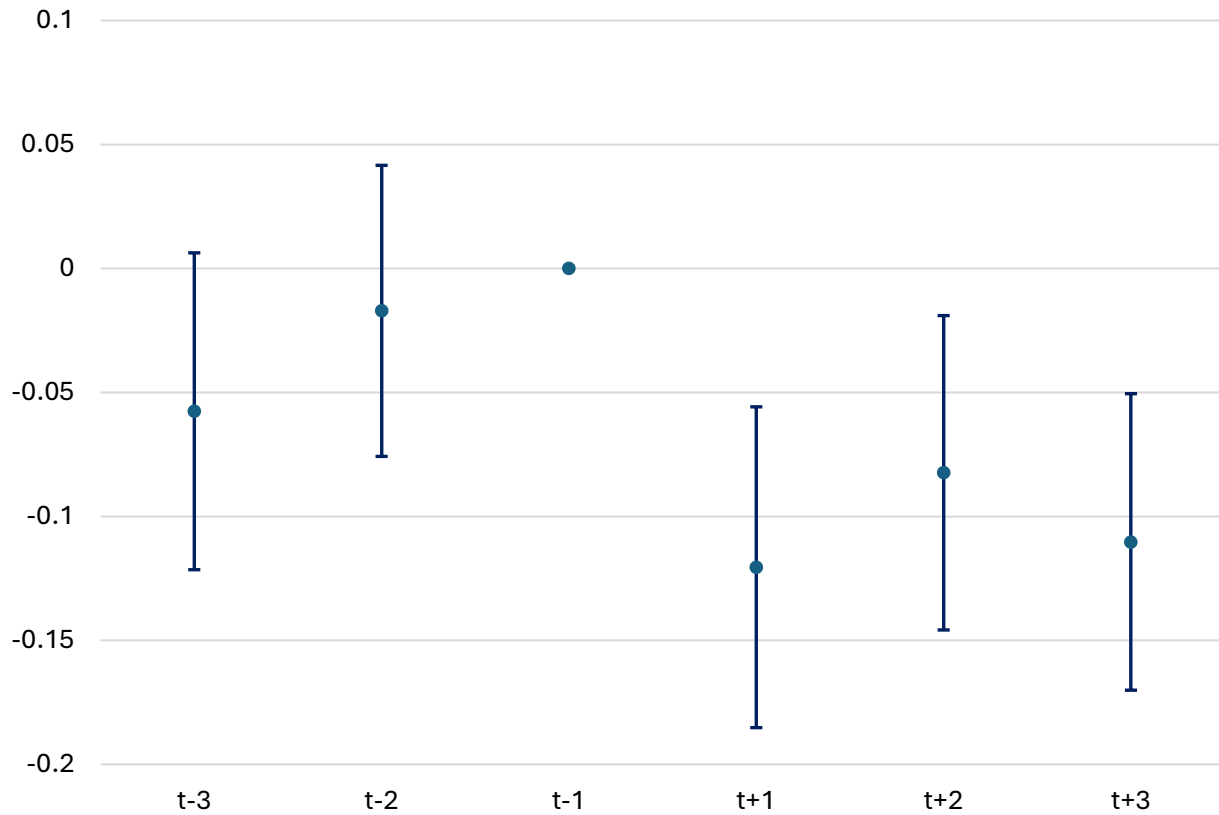


Figure 3. CEO Performance Pay Around TCJA (Difference-in-Differences Using U.S. and International Firms). This figure reports the effect of TCJA on CEO performance-based pay. The sample comes from Incentive Lab, includes firms' CEOs, and covers the period with fiscal year ends from September 30, 2015 to November 30, 2021, excluding the three-month period prior to the TCJA's effective date (January 1, 2018). Treated firms are those incorporated in the United States; control firms are those incorporated abroad. Performance-based pay is regressed on year indicator variables interacted with treatment indicator. The model includes CEO-firm fixed effects and is estimated using Poisson model. The year prior to the law's enactment serves as the baseline year to which all other years are compared. The y-axis plots the coefficient estimates on each year indicator. The x-axis shows the year relative to the TCJA effective year. The blue error bars illustrate the 95% confidence intervals of the coefficient estimates, based on standard errors clustered at the firm level.

Alt text: The figure presents a difference-in-differences event-study of CEO performance-based pay around the Tax Cuts and Jobs Act, comparing U.S. firms to international firms. Estimated coefficients are plotted by year relative to the TCJA effective date, with the pre-enactment year serving as the benchmark. Post-TCJA coefficients for U.S. firms are all negative and statistically significant at the 95% confidence level, indicating declines in performance-based pay.

Table 1. Summary Statistics

This table presents summary statistics for main variables. The firm-year sample consists of firms in IncentiveLab for the period with fiscal year ends from September 30, 2015 to November 30, 2021, excluding the three-month period prior to the TCJA's effective date (January 1, 2018). All continuous variables are winsorized at the 1st and 99th percentile values. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Appendix B.

Panel A: Summary Statistics

Variable	Mean	SD	P25	P50	P75	N
Total Pay, \$000s	7,036	6,867	2,560	4,985	9,020	15,363
Performance Pay, \$000s	3,233	3,896	575	1,957	4,374	15,363
Non-Performance Pay, \$000s	3,688	3,892	1,306	2,480	4,544	15,363
% Performance Pay	0.414	0.242	0.229	0.460	0.575	15,363
ST Performance Pay, \$000s	1,321	1,682	363	850	1,520	15,363
LT Performance Pay, \$000s	1,915	2,986	0	722	2,619	15,363
Accounting-Based Performance Pay, \$000s	2,122	3,008	0	977	2,850	15,363
Stock-Based Performance Pay, \$000s	1,108	2,243	0	0	1,300	15,363
Firm Size	7.668	1.912	6.378	7.696	8.923	15,193
Assets, \$M	11,689	32,180	588	2,198	7,499	15,195
Stock Return	0.103	0.410	-0.142	0.073	0.292	13,795
ROA	-0.026	0.212	-0.016	0.025	0.064	14,610
Leverage	0.280	0.237	0.074	0.249	0.423	15,193
NOL	0.281	0.450	0	0	1	15,313
NDTL	0.009	0.049	-0.006	0	0.024	13,799
CEO Turnover	0.105	0.306	0	0	0	14,321

Panel B: Summary Statistics Pre-TCJA

Variable	Mean	SD	P25	P50	P75	N
Total Pay, \$000s	6,367	6,289	2,252	4,464	8,274	7,611
Performance Pay, \$000s	2,937	3,667	511	1,738	3,912	7,611
Non-Performance Pay, \$000s	3,361	3,559	1,177	2,232	4,218	7,611
Assets, \$M	11,081	31,284	546	2,116	6,943	7,513
Stock Return	0.092	0.378	-0.121	0.074	0.269	6,791

Panel C: Summary Statistics Post-TCJA

Variable	Mean	SD	P25	P50	P75	N
Total Pay, \$000s	7,691	7,321	2,962	5,506	9,799	7,752
Performance Pay, \$000s	3,522	4,087	640	2,224	4,763	7,752
Non-Performance Pay, \$000s	4,010	4,164	1,470	2,718	4,903	7,752
Assets, \$M	12,296	33,040	636	2,323	8,009	7,682
Stock Return	0.114	0.439	-0.162	0.071	0.314	7,007

Table 2. TCJA and CEO Pay

This table reports the treatment effect of the Tax Cuts and Jobs Act (TCJA) on CEO pay. The sample comes from Incentive Lab, includes firms' CEOs, and covers the period with fiscal year ends from September 30, 2015 to November 30, 2021, excluding the three-month period prior to the TCJA's effective date (January 1, 2018). *Treated* equals one if a firm had above-median performance-based pay in the period before TCJA enactment, and zero otherwise. *Post* equals one if a firm's fiscal year starts after January 1, 2018, and zero otherwise. The dependent variable is CEO performance-based pay in columns 1-2; CEO performance-based pay normalized by total CEO compensation in columns 3-4; non-performance-based CEO pay in columns 5-6; and total CEO compensation in columns 7-8. The model is estimated using Poisson regressions in columns 1-2 and 5-8 (where the dependent variables are measured in dollar amounts), and OLS regressions in columns 3-4 (where the dependent variable is a ratio). CEO-firm and year fixed effects are included in all specifications. Standard errors are clustered at the firm level. *t*-statistics based on these clustered standard errors are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in Appendix B.

<i>Dependent Variable:</i>	(1) <i>Performance Pay</i>	(2) <i>Performance Pay</i>	(3) <i>% Performance Pay</i>	(4) <i>% Performance Pay</i>	(5) <i>Non-Performance Pay</i>	(6) <i>Non-Performance Pay</i>	(7) <i>Total Pay</i>	(8) <i>Total Pay</i>
Estimation:	Poisson		OLS		Poisson		Poisson	
Treated × Post	-0.545*** [-16.05]	-0.478*** [-12.23]	-0.042*** [-5.62]	-0.037*** [-4.47]	-0.167*** [-5.72]	-0.086*** [-2.78]	-0.256*** [-10.56]	-0.183*** [-6.98]
Firm Size		0.123*** [3.80]		0.013* [1.65]		0.074** [2.14]		0.075*** [2.71]
Stock Return		0.082*** [3.58]		0.004 [0.90]		0.105*** [4.94]		0.101*** [5.53]
ROA		-0.250 [-1.60]		-0.046* [-1.86]		-0.151* [-1.74]		-0.195** [-2.05]
Leverage		0.016 [0.14]		0.013 [0.47]		0.087 [0.76]		0.093 [0.95]
NDTL		-0.595** [-1.98]		-0.151 [-1.60]		0.087 [0.26]		-0.301 [-1.12]
NOL		-0.073** [-2.09]		-0.014* [-1.87]		-0.029 [-0.96]		-0.059** [-2.20]
Observations	14,052	11,240	14,680	11,703	14,680	11,703	14,680	11,703
R-squared	0.815	0.828	0.743	0.754	0.724	0.761	0.797	0.832
CEO-Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y

Table 3. TCJA and CEO Pay: Controlling for Differential Trends for Firms with Different Characteristics

This table reports the treatment effect of the Tax Cuts and Jobs Act (TCJA) on CEO pay. The sample comes from Incentive Lab, includes firms' CEOs, and covers the period with fiscal year ends from September 30, 2015 to November 30, 2021, excluding the three-month period prior to the TCJA's effective date (January 1, 2018). *Treated* equals one if a firm had above-median performance-based pay in the period before TCJA enactment, and zero otherwise. *Post* equals one if a firm's fiscal year starts after January 1, 2018, and zero otherwise. The dependent variable is CEO performance-based pay in column 1; CEO performance-based pay normalized by total CEO compensation in column 2; non-performance-based CEO pay in column 3; and total CEO compensation in column 4. The model is estimated using Poisson regressions in columns 1 and 3-4 (where the dependent variables are measured in dollar amounts), and OLS regressions in column 2 (where the dependent variable is a ratio). Standard errors are clustered at the firm level. *t*-statistics based on these clustered standard errors are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Appendix B.

<i>Dependent Variable:</i>	(1) <i>Performance Pay</i>	(2) <i>% Performance Pay</i>	(3) <i>Non-Performance Pay</i>	(4) <i>Total Pay</i>
Estimation:	Poisson	OLS	Poisson	Poisson
Treated $\times$ Post	-0.500*** [-11.07]	-0.052*** [-4.96]	-0.124*** [-3.20]	-0.213*** [-6.45]
Observations	10,948	11,326	11,326	11,326
R-squared	0.830	0.747	0.756	0.833
CEO-Firm FE	Y	Y	Y	Y
Year-Size FE	Y	Y	Y	Y
Year-Return FE	Y	Y	Y	Y
Year-ROA FE	Y	Y	Y	Y
Year-Leverage FE	Y	Y	Y	Y
Year-NDTL FE	Y	Y	Y	Y
Year-NOL FE	Y	Y	Y	Y

Table 4. TCJA and CEO Pay: Identification Using Other Executives' Pay in the Same Firm and Year

This table reports the treatment effect of the Tax Cuts and Jobs Act (TCJA) on CEO pay. The sample comes from Incentive Lab and includes firms' CEOs as well as other executives ranked below top five in terms of total compensation. The sample period spans the period with fiscal year ends from September 30, 2015 to November 30, 2021, excluding the three-month period prior to the TCJA's effective date (January 1, 2018). *Treated* equals one if a firm had above-median performance-based pay in the period before TCJA enactment, and zero otherwise. *Post* equals one if a firm's fiscal year starts after January 1, 2018, and zero otherwise. *CEO* equals one if the executive is the firm's CEO, and zero otherwise. The dependent variable is CEO performance-based pay in column 1; CEO performance-based pay normalized by total CEO compensation in column 2; non-performance-based CEO pay in column 3; and total CEO compensation in column 4. The model is estimated using Poisson regressions in columns 1, 3, and 4 (where the dependent variables are measured in dollar amounts), and an OLS regression in column 2 (where the dependent variable is a ratio). Standard errors are clustered at the firm level. *t*-statistics based on these clustered standard errors are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Appendix B.

<i>Dependent Variable:</i>	(1) <i>Performance Pay</i>	(2) <i>% Performance Pay</i>	(3) <i>Non-Performance Pay</i>	(4) <i>Total Pay</i>
Estimation:	Poisson	OLS	Poisson	Poisson
Treated $\times$ Post $\times$ CEO	-0.395*** [-5.10]	-0.059*** [-3.88]	0.030 [0.44]	-0.157*** [-2.65]
Observations	6,695	6,899	6,899	6,899
R-squared	0.936	0.761	0.918	0.947
Firm-Year FE	Y	Y	Y	Y
CEO-Year FE	Y	Y	Y	Y
CEO-Treated FE	Y	Y	Y	Y

Table 5. CEO Pay and TCJA: Identification Using International Firms' Compensation

This table reports the treatment effect of the Tax Cuts and Jobs Act (TCJA) on CEO pay using compensation data on U.S. and international firms. We use Propensity Score Matching with replacement and match each U.S. firm to at most three international firms on industry (two-digit SIC code) and firm size (total assets). *Treated (USA)* equals one if a firm is listed in the United States, and zero if it is listed in another country. *Post* equals one if a firm's fiscal year starts after January 1, 2018, and zero otherwise. The sample comes from Incentive Lab and includes firms' CEOs. The sample covers the period with fiscal year ends from September 30, 2015 to November 30, 2021, excluding the three-month period prior to the TCJA's effective date (January 1, 2018). The dependent variable is CEO performance-based pay in column 1; CEO performance-based pay normalized by total CEO compensation in column 2; non-performance-based CEO pay in column 3; and total CEO compensation in column 4. The model is estimated using Poisson regressions in columns 1, 3, and 4 (where the dependent variables are measured in dollar amounts), and an OLS regression in column 2 (where the dependent variable is a ratio). Standard errors are clustered at the firm level. *t*-statistics based on these clustered standard errors are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Appendix B.

<i>Dependent Variable:</i>	(1) <i>Performance Pay</i>	(2) <i>Performance Pay</i>	(3) <i>% Performance Pay</i>	(4) <i>% Performance Pay</i>	(5) <i>Non-Performance Pay</i>	(6) <i>Non-Performance Pay</i>	(7) <i>Total Pay</i>	(8) <i>Total Pay</i>
Estimation:	Poisson		OLS		Poisson		Poisson	
Treated (USA) $\times$ Post	-0.087*** [-3.80]	-0.110* [-1.69]	-0.024*** [-5.31]	-0.033** [-2.00]	0.007 [0.27]	0.057 [0.75]	-0.032* [-1.68]	-0.013 [-0.23]
Observations	23,033	18,163	24,829	19,329	24,829	19,329	24,829	19,329
R-squared	0.826	0.836	0.805	0.809	0.738	0.768	0.801	0.831
CEO-Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	N	Y	N	Y	N	Y	N
Year-Size FE	N	Y	N	Y	N	Y	N	Y
Year-Return FE	N	Y	N	Y	N	Y	N	Y
Year-ROA FE	N	Y	N	Y	N	Y	N	Y
Year-Leverage FE	N	Y	N	Y	N	Y	N	Y
Year-NDTL FE	N	Y	N	Y	N	Y	N	Y
Year-NOL FE	N	Y	N	Y	N	Y	N	Y

Table 6. CEO Pay and TCJA: Types of Performance Pay

This table reports the treatment effect of the Tax Cuts and Jobs Act (TCJA) on type of CEO performance pay. The sample in Panel A includes CEOs and in Panel B it includes firms' CEOs as well as other executives ranked below top five in terms of total compensation. The sample period covers fiscal year ends from September 30, 2015 to November 30, 2021, excluding the three-month period prior to the TCJA's effective date (January 1, 2018). *Treated* equals one if a firm had above-median performance-based pay in the period before TCJA enactment, and zero otherwise. *Post* equals one if a firm's fiscal year starts after January 1, 2018, and zero otherwise. *CEO* equals one if the executive is the firm's CEO, and zero otherwise. The dependent variable in Panel A is short-term performance pay in columns 1-2; long-term performance pay in columns (3)-(4); accounting-based performance pay in columns 5-6; and stock-based performance pay in columns 7-8. The dependent variable in Panel B is short-term performance pay in column 1; long-term performance pay in column 2; accounting-based performance pay in column 3; and stock-based performance pay in column 4. The model is estimated using Poisson regressions. Standard errors are clustered at the firm level. *t*-statistics based on these clustered standard errors are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Appendix B.

Panel A: CEO Compensation (Difference-in-Differences)

<i>Dependent Variable:</i>	(1) <i>ST Performance Pay</i>	(2) <i>LT Performance Pay</i>	(3) <i>Accounting-Based Performance Pay</i>	(4) <i>Stock-Based Performance Pay</i>
Treated $\times$ Post	-0.321*** [-9.47]	-0.813*** [-14.26]	-0.402*** [-9.78]	-0.784*** [-10.60]
Observations	13,622	11,117	12,488	7,544
R-squared	0.800	0.692	0.759	0.624
Diff Coeffs (<i>p</i> -value)		0.001***		0.001***
CEO-Firm FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y

Panel B: Executive Compensation (Triple Differences)

<i>Dependent Variable:</i>	(1) <i>ST Performance Pay</i>	(2) <i>LT Performance Pay</i>	(3) <i>Accounting-Based Performance Pay</i>	(4) <i>Stock-Based Performance Pay</i>
Treated $\times$ Post $\times$ CEO	-0.225*** [-3.15]	-0.450*** [-3.34]	-0.273*** [-3.26]	-0.547*** [-3.05]
Observations	6,477	5,113	5,844	3,247
R-squared	0.907	0.914	0.931	0.909
Diff Coeffs (<i>p</i> -value)		0.11		0.13
Firm-Year FE	Y	Y	Y	Y
CEO-Year FE	Y	Y	Y	Y
CEO-Treated FE	Y	Y	Y	Y

Table 7. Heterogeneity: Which Firms and Executives Are More Sensitive to Tax Burden

This table reports the treatment effect of the Tax Cuts and Jobs Act (TCJA) on CEO pay. The sample comes from Incentive Lab, includes firms' CEOs, and covers the period with fiscal year ends from September 30, 2015 to November 30, 2021, excluding the three-month period prior to the TCJA's effective date (January 1, 2018). *Treated* equals one if a firm had above-median performance-based pay in the period before TCJA enactment, and zero otherwise. *Post* equals one if a firm's fiscal year starts after January 1, 2018, and zero otherwise. The dependent variable is CEO performance-based pay in all specifications, and the model is estimated using Poisson regressions. CEO-firm and year fixed effects are included in all specifications. Standard errors are clustered at the firm level. *t*-statistics based on these clustered standard errors are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in Appendix B.

<i>Dependent Variable:</i>	(1)	(2)	(3)	(4)	(5)	(6)
			<i>Performance Pay</i>			
Treated $\times$ Post	-0.338*** [-8.35]	-0.336*** [-7.53]	-0.614*** [-10.90]	-0.582*** [-9.18]	-0.474*** [-7.07]	-0.484*** [-6.37]
Treated $\times$ Post $\times$ High SAI	-0.247*** [-3.72]	-0.231*** [-2.99]				
Treated $\times$ Post $\times$ Dividend Payer			0.302*** [4.59]	0.291*** [3.93]		
Treated $\times$ Post $\times$ High GAI					0.204** [2.34]	0.226** [2.30]
Firm Size		0.112*** [3.02]		0.116*** [3.45]		0.097*** [2.69]
Stock Return		0.067*** [2.95]		0.065*** [2.88]		0.113*** [4.19]
ROA		-0.237 [-1.48]		-0.237 [-1.49]		0.058 [0.32]
Leverage		0.010 [0.08]		-0.000 [-0.00]		-0.188 [-1.25]
NDTL		-0.598* [-1.92]		-0.604* [-1.96]		-1.017*** [-2.69]
NOL		-0.076** [-2.12]		-0.074** [-2.08]		-0.009 [-0.20]
Observations	12,709	10,807	12,877	10,829	6,299	5,530
R-squared	0.829	0.831	0.828	0.832	0.825	0.832
CEO-Firm FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y

Table 8. TCJA and CEO Turnover

This table reports the treatment effect of the Tax Cuts and Jobs Act (TCJA) on CEO turnover. The sample comes from IncentiveLab and includes firms' CEOs. The sample covers the period with fiscal year ends from September 30, 2015 to November 30, 2021, excluding the three-month period prior to the TCJA's effective date (January 1, 2018). The dependent variable is CEO turnover. *Treated* equals one if a firm had above-median performance-based pay in the period before TCJA enactment, and zero otherwise. *Post* equals one if a firm's fiscal year starts after January 1, 2018, and zero otherwise. Standard errors are clustered at the firm level. *t*-statistics based on these clustered standard errors are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Appendix B.

<i>Dependent Variable:</i>	(1)	(2)	(3)	(4)	(5)	(6)
	<i>CEO Turnover</i>					
Treated $\times$ Post	-0.035** [-2.14]	-0.030* [-1.68]	-0.027* [-1.69]	-0.033* [-1.83]	-0.052** [-2.32]	-0.050** [-2.09]
Treated $\times$ Post $\times$ High Stock Return	0.060*** [2.70]	0.049** [2.03]				
Treated $\times$ Post $\times$ High ROA			0.027 [1.20]	0.047* [1.90]		
Treated $\times$ Post $\times$ Low Noncompete Enforcement					0.060** [2.33]	0.057** [2.07]
Firm Size		0.032** [2.33]		0.034** [2.40]		0.030** [2.18]
Stock Return		-0.037*** [-4.48]		-0.038*** [-4.70]		-0.042*** [-5.10]
ROA		-0.111*** [-2.59]		-0.114*** [-2.70]		-0.113*** [-2.63]
Leverage		-0.044 [-1.17]		-0.049 [-1.32]		-0.052 [-1.37]
NDTL		-0.163 [-1.01]		-0.170 [-1.05]		-0.166 [-0.99]
NOL		-0.006 [-0.41]		-0.007 [-0.50]		-0.006 [-0.40]
Observations	12,692	11,190	12,684	11,142	12,794	10,872
R-squared	0.175	0.186	0.178	0.189	0.180	0.188
Firm FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y

Table 9. Do New CEOs Have Lower Performance Pay and Total Pay?

This table reports the treatment effect of the Tax Cuts and Jobs Act (TCJA) on CEO turnover. The sample comes from Incentive Lab and includes firms' CEOs. The sample covers the period with fiscal year ends from September 30, 2015 to November 30, 2021, excluding the three-month period prior to the TCJA's effective date (January 1, 2018). *Treated* is a dummy variable equal to one if a firm had above-median performance-based pay in the period before TCJA enactment, and zero otherwise. *Post* is a dummy variable equal to one if a firm's fiscal year starts after January 1, 2018, and zero otherwise. The dependent variable is CEO performance-based pay in specification 1; CEO performance-based pay normalized by total CEO compensation in specification 2; and total CEO compensation in specification 4. The model is estimated using Poisson regressions in specifications 1 and 3 (where the dependent variables are measured in dollar amounts), and an OLS regression in specification 2 (where the dependent variable is a ratio). Standard errors are clustered at the firm level. *t*-statistics based on these clustered standard errors are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Appendix B.

<i>Dependent Variable:</i>	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Performance Pay</i>		<i>% Performance Pay</i>			<i>Total Pay</i>
Estimation:	Poisson		OLS		Poisson	
Treated $\times$ Post	-0.547*** [-15.30]	-0.502*** [-12.00]	-0.036*** [-5.26]	-0.038*** [-4.97]	-0.275*** [-10.86]	-0.200*** [-7.15]
Treated $\times$ Post $\times$ CEO Turnover	-0.138* [-1.90]	-0.025 [-0.33]	-0.053*** [-3.67]	-0.042*** [-2.71]	-0.140** [-2.46]	-0.137** [-2.35]
Firm Size		0.140*** [3.95]		0.012* [1.68]		0.110*** [3.77]
Stock Return		0.082*** [3.79]		0.005 [1.28]		0.102*** [5.65]
ROA		-0.049 [-0.36]		-0.035 [-1.59]		-0.129 [-1.52]
Leverage		0.036 [0.30]		0.012 [0.53]		0.043 [0.45]
NDTL		-0.220 [-0.73]		-0.123 [-1.55]		-0.181 [-0.67]
NOL		-0.064* [-1.93]		-0.016** [-2.53]		-0.053** [-2.03]
Observations	14,183	11,440	14,700	11,815	14,700	11,815
R-squared	0.788	0.799	0.699	0.706	0.762	0.801
Firm FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y

Table 10. Performance Pay and TCJA Abnormal Returns Around TCJA Announcement

This table reports regression results on the effect of the level of performance-based pay on abnormal returns around the date when the House Ways and Means Committee released the first draft of the TCJA (November 2, 2017), which explicitly mentioned changes to the deductibility of performance-based executive compensation. Standard errors are clustered at the firm level. The dependent variable is the abnormal return on November 2, 2017, calculated using the Fama–French–Carhart four-factor model. *t*-statistics based on robust standard errors are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Appendix B.

<i>Dependent Variable:</i>	(1)	(2)	(3)	(4)
			<i>Abnormal Return, %</i>	
Performance Pay	-0.065*** [-3.29]	-0.054** [-2.26]		
Performance Pay Decile			-0.107*** [-4.00]	-0.087** [-2.43]
Firm Size		0.021 [0.34]		0.031 [0.50]
Leverage		-0.528 [-1.37]		-0.452 [-1.17]
ROA		0.745 [0.48]		0.804 [0.52]
Tax Rate		0.499 [1.59]		0.521* [1.66]
Observations	2,421	1,533	2,421	1,533
R-squared	0.004	0.007	0.007	0.008

Internet Appendix to “When the Tax Break Breaks: CEO Pay and Turnover Following TCJA”

Table IA.1. Examples of Firms Discussing TCJA in Proxies

<i>Firm</i>	<i>Proxy Verbiage</i>
Arrow Electronics	Deletion of “Covered Employee Annual Incentive Awards” as a type of award granted under the Plan. Such awards were annual incentive awards granted solely to executive-level Section 162(m) “covered employees” of the Company, and were specifically structured to meet the pre-TCJA performance-based compensation exemption to the Section 162(m) deduction limitation. Because such exemption has been eliminated for any new or materially modified award after November 2, 2017, there is no continuing need to offer Covered Employee Annual Incentive Awards under the Plan. Thus, beginning in 2019, no further Covered Employee Annual Incentive Awards will be granted under the Plan.
Campbell Soup	Following the adoption of the Tax Cuts and Jobs Act of 2017 (the “TCJA”) and the elimination of the tax deduction for performance-based compensation under IRC Section 162(m), the Committee incorporated time-lapse restricted share units into the fiscal 2019 program for NEOs in lieu of EPS performance-restricted share units.
Best Buy	The Committee has historically attempted to structure its compensation arrangements to achieve deductibility under Section 162(m) of the Internal Revenue Code, unless the benefit of such deductibility was considered by the Committee to be outweighed by the need for flexibility or the attainment of other objectives. For purposes of Section 162(m), we created a sub-plan under our Amended & Restated 2014 Omnibus Incentive Plan for our fiscal year ended February 2, 2019.
International Flavors & Fragrances	Further, taking into account the elimination of the exemption for performance-based compensation under Section 162(m), the Committee may determine to make changes or amendments to its existing compensation programs in order to revise aspects of our programs that were initially designed to comply with Section-162(m) but that may no longer serve as an appropriate incentive measure for our executive officers.
Ford Motor	Despite the Committee’s efforts to structure the Covered Executives’ Incentive Bonus and Performance Units in a manner intended to be exempt from the Section 162(m) deduction limits, because of ambiguities and uncertainties as to the application and interpretation of Section 162(m) and the regulations issued thereunder, no assurance can be given that such compensation will satisfy the requirements for exemption. Further, the Compensation Committee reserves the right to modify compensation that was initially intended to be exempt from Section 162(m) if it determines that such modifications are consistent with our business needs. Generally, we strive to maximize the tax deductibility of our compensation arrangements.
Teva Pharmaceuticals	However, given the changes to Section 162(m), we expect that the U.S.-based tax deductibility of performance-based compensation in excess of \$1.0 million will be less of a consideration for us when designing and implementing our executive officers’ compensation program in future years.
Qualcomm Inc	Further, considering the elimination of the exception for performance-based compensation, the Compensation Committee may determine to make changes or amendments to the Company’s existing compensation programs in order to revise aspects of our executive compensation programs that were initially designed to comply with Section 162(m) but that may no longer serve as an appropriate incentive measure for our executive officers.

Table IA.2. Key Legislative Dates Related to the TCJA

This table summarizes key legislative events associated with the passage of the Tax Cuts and Jobs Act (TCJA), including the first formal mention of changes to the deductibility of performance-based executive compensation.

<i>Date</i>	<i>Event</i>
Sep 27, 2017	GOP leaders and the Trump administration release the "Unified Framework for Fixing Our Broken Tax Code".
Nov 2, 2017	The TCJA is formally introduced in the House. The House Ways and Means Committee releases its first draft of the TCJA (the House bill H.R. 1). Changes to the deductibility of performance-based executive compensation are mentioned for the first time.
Nov 9, 2017	The Senate Finance Committee releases its draft version of the bill. The House Ways and Means Committee approves the House bill H.R. 1 with amendments.
Nov 16, 2017	House passes its version of the TCJA.
Dec 2, 2017	Senate passes its own version of the TCJA.
Dec 15, 2017	Conference committee reconciles House and Senate versions.
Dec 20, 2017	Senate passes final bill (after House revote).
Dec 22, 2017	The TCJA is signed into law by the President.

Table IA.3. Robustness: No Year Fixed Effects

This table reports the treatment effect of the Tax Cuts and Jobs Act (TCJA) on CEO pay. The sample comes from Incentive Lab, includes firms' CEOs, and covers the period with fiscal year ends from September 30, 2015 to November 30, 2021, excluding the three-month period prior to the TCJA's effective date (January 1, 2018). *Treated* is a dummy variable equal to one if a firm had above-median performance-based pay in the period before TCJA enactment, and zero otherwise. *Post* is a dummy variable equal to one if a firm's fiscal year starts after January 1, 2018, and zero otherwise. The dependent variable is CEO performance-based pay in specifications 1-2; CEO performance-based pay normalized by total CEO compensation in specifications 3-4; non-performance-based CEO pay in specifications 5-6; and total CEO compensation in specifications 7-8. The model is estimated using Poisson regressions in specifications 1-2 and 5-8 (where the dependent variables are measured in dollar amounts), and OLS regressions in specifications 3-4 (where the dependent variable is a ratio). CEO-firm fixed effects are included in all specifications. Standard errors are clustered at the firm level. *t*-statistics based on these clustered standard errors are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in Appendix B.

<i>Dependent Variable:</i>	(1) <i>Performance Pay</i>	(2) <i>Performance Pay</i>	(3) <i>% Performance Pay</i>	(4) <i>% Performance Pay</i>	(5) <i>Non-Performance Pay</i>	(6) <i>Non-Performance Pay</i>	(7) <i>Total Pay</i>	(8) <i>Total Pay</i>
Estimation:	Poisson		OLS		Poisson		Poisson	
Post	0.715*** [23.63]	0.604*** [16.66]	0.062*** [10.90]	0.053*** [8.03]	0.227*** [9.89]	0.128*** [4.94]	0.380*** [19.60]	0.274*** [12.42]
Treated × Post	-0.544*** [-15.97]	-0.469*** [-11.97]	-0.042*** [-5.59]	-0.035*** [-4.30]	-0.166*** [-5.69]	-0.085*** [-2.73]	-0.254*** [-10.48]	-0.176*** [-6.74]
Firm Size		0.189*** [6.08]		0.024*** [3.17]		0.084** [2.52]		0.116*** [4.36]
Stock Return		0.089*** [4.42]		0.006 [1.26]		0.106*** [5.42]		0.106*** [6.61]
ROA		-0.249 [-1.55]		-0.053** [-2.18]		-0.155* [-1.79]		-0.206** [-2.12]
Leverage		0.150 [1.28]		0.027 [0.96]		0.099 [0.89]		0.165* [1.73]
NDTL		-0.773*** [-2.59]		-0.174* [-1.85]		0.060 [0.18]		-0.411 [-1.53]
NOL		-0.067* [-1.93]		-0.013* [-1.84]		-0.030 [-1.00]		-0.057** [-2.14]
Observations	14,052	11,240	14,680	11,703	14,680	11,703	14,680	11,703
R-squared	0.809	0.825	0.740	0.752	0.722	0.761	0.793	0.830
CEO-Firm FE	Y	Y	Y	Y	Y	Y	Y	Y

Table IA.4. Robustness: Controlling for Industry by Year Fixed Effects

This table reports the treatment effect of the Tax Cuts and Jobs Act (TCJA) on CEO pay. The sample comes from Incentive Lab, includes firms' CEOs, and covers the period with fiscal year ends from September 30, 2015 to November 30, 2021, excluding the three-month period prior to the TCJA's effective date (January 1, 2018). *Treated* is a dummy variable equal to one if a firm had above-median performance-based pay in the period before TCJA enactment, and zero otherwise. *Post* is a dummy variable equal to one if a firm's fiscal year starts after January 1, 2018, and zero otherwise. The dependent variable is CEO performance-based pay in specifications 1-2; CEO performance-based pay normalized by total CEO compensation in specifications 3-4; non-performance-based CEO pay in specifications 5-6; and total CEO compensation in specifications 7-8. The model is estimated using Poisson regressions in specifications 1-2 and 5-8 (where the dependent variables are measured in dollar amounts), and OLS regressions in specifications 3-4 (where the dependent variable is a ratio). CEO-firm and industry-year fixed effects are included in all specifications. Standard errors are clustered at the firm level. *t*-statistics based on these clustered standard errors are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in Appendix B.

<i>Dependent Variable:</i>	(1) <i>Performance Pay</i>	(2) <i>Performance Pay</i>	(3) <i>% Performance Pay</i>	(4) <i>% Performance Pay</i>	(5) <i>Non-Performance Pay</i>	(6) <i>Non-Performance Pay</i>	(7) <i>Total Pay</i>	(8) <i>Total Pay</i>
Estimation:	Poisson		OLS		Poisson		Poisson	
Treated × Post	-0.546*** [-15.81]	-0.475*** [-11.89]	-0.045*** [-5.62]	-0.037*** [-4.24]	-0.156*** [-5.41]	-0.085*** [-2.83]	-0.253*** [-10.36]	-0.183*** [-7.07]
Firm Size		0.095** [2.46]		0.009 [1.05]		0.074* [1.95]		0.063** [1.99]
Stock Return		0.077*** [3.21]		0.003 [0.58]		0.095*** [4.42]		0.093*** [5.07]
ROA		-0.221 [-1.44]		-0.042* [-1.66]		-0.128 [-1.48]		-0.163* [-1.73]
Leverage		0.116 [0.88]		0.018 [0.57]		0.135 [1.13]		0.156 [1.47]
NDTL		-0.499 [-1.57]		-0.193* [-1.87]		0.261 [0.74]		-0.205 [-0.74]
NOL		-0.082** [-2.33]		-0.014* [-1.85]		-0.022 [-0.72]		-0.056** [-2.10]
Observations	14,030	11,221	14,658	11,684	14,658	11,684	14,658	11,684
R-squared	0.823	0.838	0.754	0.766	0.741	0.780	0.808	0.844
CEO-Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Ind-Year FE	Y	Y	Y	Y	Y	Y	Y	Y

Table IA.5. Robustness: Controlling for One-Off Gains and Losses Related to Valuation of Deferred Tax Assets and Liabilities

This table reports the treatment effect of the Tax Cuts and Jobs Act on CEO pay, controlling for the effect of one-off gains and losses related to the valuation of deferred tax assets and liabilities. The sample comes from Incentive Lab, includes firms' CEOs, and covers the period with fiscal year ends from September 30, 2015 to November 30, 2021, excluding the three-month period prior to the TCJA's effective date (January 1, 2018). *Treated* is a dummy variable equal to one if a firm had above-median performance-based pay in the period before TCJA enactment, and zero otherwise. *Post* is a dummy variable equal to one if a firm's fiscal year starts after January 1, 2018, and zero otherwise. The dependent variable is CEO total pay in specifications 1–2; log of CEO total pay in specifications 3–4; performance-based CEO pay in specifications 5–6; and log of CEO performance-based pay in specifications 7–8. The model is estimated using Poisson regressions in specifications 1–2 and 5–6, and OLS regressions in specifications 3–4 and 7–8. CEO-firm and year fixed effects are included in all specifications. Standard errors are clustered at the firm level. *t*-statistics based on these clustered standard errors are reported in brackets. *t*-statistics based on these clustered standard errors are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in Appendix B.

<i>Dependent Variable:</i>	(1) <i>Total Pay</i>	(2) <i>Total Pay</i>	(3) <i>Log(Total Pay)</i>	(4) <i>Log(Total Pay)</i>	(5) <i>Performance Pay</i>	(6) <i>Performance Pay</i>	(7) <i>Log(Performance Pay)</i>	(8) <i>Log(Performance Pay)</i>
Estimation:	Poisson		OLS		Poisson		OLS	
Treated × Post	-0.245*** [-9.31]	-0.183*** [-7.01]	-0.249*** [-9.88]	-0.143*** [-6.30]	-0.554*** [-15.00]	-0.478*** [-12.24]	-0.304*** [-9.71]	-0.232*** [-7.53]
NDTL × Post	0.214 [0.87]	0.117 [0.48]	0.081 [0.31]	0.257 [1.12]	-0.191 [-0.64]	-0.306 [-1.05]	-0.301 [-0.89]	-0.269 [-0.78]
Firm Size		0.074*** [2.70]		0.166*** [6.69]		0.124*** [3.85]		0.150*** [4.46]
Stock Return		0.101*** [5.53]		0.118*** [7.18]		0.082*** [3.58]		0.056*** [2.94]
ROA		-0.194** [-2.03]		-0.097 [-1.18]		-0.254 [-1.63]		-0.221** [-2.02]
Leverage		0.093 [0.94]		0.084 [0.97]		0.017 [0.14]		-0.005 [-0.04]
NOL		-0.059** [-2.20]		-0.025 [-1.10]		-0.073** [-2.11]		-0.078*** [-2.78]
NDTL	0.136 [0.53]	-0.310 [-1.15]	0.252 [0.99]	-0.179 [-0.67]	-0.180 [-0.63]	-0.576* [-1.92]	-0.152 [-0.51]	-0.444 [-1.41]
Observations	13,077	11,703	13,077	11,703	12,549	11,240	11,767	10,685
R-squared	0.796	0.832	0.800	0.850	0.814	0.829	0.850	0.861
CEO-Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y

Table IA.6. Subsample Evidence

This table reports the treatment effect of the Tax Cuts and Jobs Act (TCJA) on CEO pay in subsamples. *Treated* is a dummy variable equal to one if a firm had above-median performance-based pay in the period before TCJA enactment, and zero otherwise. *Post* is a dummy variable equal to one if a firm's fiscal year starts after January 1, 2018, and zero otherwise. Panel A splits firms by whether their pre-TCJA income tax rate (tax paid/pretax income less special items) is above or below the sample median. Panel B separates firms with positive foreign profits (multinational) from others (domestic). Panel C sorts firms by size (assets) relative to the sample median. Panel D classifies firms by their level of total CEO pay prior to the TCJA. The dependent variable is CEO performance-based pay in specifications 1-2; CEO performance-based pay normalized by total CEO compensation in specifications 3-4; non-performance-based CEO pay in specifications 5-6; and total CEO compensation in specifications 7-8. The model is estimated using Poisson regressions in specifications 1-2 and 5-8 (where the dependent variables are measured in dollar amounts), and OLS regressions in specifications 3-4 (where the dependent variable is a ratio). CEO-firm and year fixed effects are included in all specifications. Standard errors are clustered at the firm level. *t*-statistics based on these clustered standard errors are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in Appendix B.

Panel A: Firms with Low vs. High Income Tax

<i>Dep. Variable:</i>	(1) <i>Performance Pay</i>	(2) <i>Performance Pay</i>	(3) <i>% Performance Pay</i>	(4) <i>% Performance Pay</i>	(5) <i>Non-Performance Pay</i>	(6) <i>Non-Performance Pay</i>	(7) <i>Total Pay</i>	(8) <i>Total Pay</i>
<i>Income Tax:</i>	Low	High	Low	High	Low	High	Low	High
Treated × Post	-0.495*** [-9.19]	-0.429*** [-9.01]	-0.038*** [-2.98]	-0.034*** [-3.02]	-0.145*** [-3.24]	-0.101** [-2.21]	-0.216*** [-6.27]	-0.201*** [-5.41]
Observations	5,520	5,562	5,723	5,724	5,723	5,724	5,723	5,724
R-squared	0.805	0.837	0.713	0.737	0.728	0.774	0.811	0.844
CEO-Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y

Panel B: Domestic vs. Multinational Firms

<i>Dep. Variable:</i>	(1) <i>Performance Pay</i>	(2) <i>Performance Pay</i>	(3) <i>% Performance Pay</i>	(4) <i>% Performance Pay</i>	(5) <i>Non-Performance Pay</i>	(6) <i>Non-Performance Pay</i>	(7) <i>Total Pay</i>	(8) <i>Total Pay</i>
<i>Firm Type:</i>	Domestic	Multin.	Domestic	Multin.	Domestic	Multin.	Domestic	Multin.
Treated × Post	-0.555*** [-12.84]	-0.519*** [-9.16]	-0.038*** [-3.71]	-0.052*** [-4.23]	-0.199*** [-4.89]	-0.116*** [-2.63]	-0.282*** [-8.34]	-0.212*** [-6.15]
Observations	8,454	5,563	8,989	5,658	8,989	5,658	8,989	5,658
R-squared	0.797	0.829	0.745	0.731	0.717	0.730	0.775	0.817
CEO-Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y

Panel C: Small vs. Large Firms

<i>Dep. Variable:</i>	(1) <i>Performance Pay</i>	(2) <i>Performance Pay</i>	(3) <i>% Performance Pay</i>	(4) <i>% Performance Pay</i>	(5) <i>Non-Performance Pay</i>	(6) <i>Non-Performance Pay</i>	(7) <i>Total Pay</i>	(8) <i>Total Pay</i>
<i>Firm Size:</i>	Small	Large	Small	Large	Small	Large	Small	Large
Treated $\times$ Post	-0.532*** [-9.68]	-0.611*** [-11.66]	-0.055*** [-4.66]	-0.049*** [-4.13]	-0.218*** [-4.24]	-0.128*** [-2.94]	-0.292*** [-6.60]	-0.246*** [-6.79]
Observations	6,268	7,746	6,628	8,024	6,628	8,024	6,628	8,024
R-squared	0.731	0.800	0.726	0.745	0.659	0.721	0.706	0.783
CEO-Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y

Panel D: Firms with Low vs. High CEO Pay

<i>Dep. Variable:</i>	(1) <i>Performance Pay</i>	(2) <i>Performance Pay</i>	(3) <i>% Performance Pay</i>	(4) <i>% Performance Pay</i>	(5) <i>Non-Performance Pay</i>	(6) <i>Non-Performance Pay</i>	(7) <i>Total Pay</i>	(8) <i>Total Pay</i>
<i>CEO Pay:</i>	Low	High	Low	High	Low	High	Low	High
Treated $\times$ Post	-0.355*** [-6.05]	-0.783*** [-9.77]	-0.042*** [-3.02]	-0.110*** [-6.38]	-0.075 [-0.95]	0.044 [0.98]	-0.182*** [-2.93]	-0.115*** [-3.21]
Observations	6,260	6,598	6,685	6,657	6,685	6,657	6,685	6,657
R-squared	0.720	0.754	0.724	0.711	0.654	0.690	0.693	0.748
CEO-Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y

Panel E: Firms with Five NEOs vs. Firms with More Than Five NEOs

<i>Dep. Variable:</i>	(1) <i>Performance Pay</i>	(2) <i>Performance Pay</i>	(3) <i>% Performance Pay</i>	(4) <i>% Performance Pay</i>	(5) <i>Non-Performance Pay</i>	(6) <i>Non-Performance Pay</i>	(7) <i>Total Pay</i>	(8) <i>Total Pay</i>
<i>Firm NEOs:</i>	5+	5	5+	5	5+	5	5+	5
Treated $\times$ Post	-0.444*** [-6.24]	-0.550*** [-14.47]	-0.060** [-2.26]	-0.040*** [-4.73]	0.006 [0.06]	-0.182*** [-5.61]	-0.103 [-1.39]	-0.266*** [-9.88]
Observations	1,694	10,855	1,729	11,458	1,729	11,458	1,729	11,458
R-squared	0.826	0.827	0.739	0.763	0.769	0.738	0.839	0.807
CEO-Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y

Table IA.7. CEO Pay and TCJA: Propensity Score Matching

This table reports the treatment effect of the Tax Cuts and Jobs Act (TCJA) on CEO pay. We use propensity score matching with replacement on industry (two-digit SIC code) and firm size (total assets). *Treated* is a dummy variable equal to one if a firm had above-median performance-based pay in the period before TCJA enactment, and zero otherwise. *Post* is a dummy variable equal to one if a firm's fiscal year starts after January 1, 2018, and zero otherwise. *CEO* is a dummy variable equal to one if the executive is the firm's CEO, and zero otherwise. The sample includes CEOs and spans fiscal year ends from September 30, 2015 to November 30, 2021, excluding the three-month period prior to the TCJA's effective date and fiscal year 2020. The dependent variable is CEO performance pay in specifications 1-2; CEO performance pay normalized by total compensation in specifications 3-4; non-performance CEO pay in specifications 5-6; and total CEO compensation in specifications 7-8. The model is estimated using Poisson regressions in specifications 1-2 and 5-8 (where the dependent variables are measured in dollar amounts), and OLS regressions in specification 3-4 (where the dependent variable is a ratio). *t*-statistics based on these clustered standard errors are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Appendix B.

<i>Dependent Variable:</i>	(1) <i>Performance Pay</i>	(2) <i>Performance Pay</i>	(3) <i>% Performance Pay</i>	(4) <i>% Performance Pay</i>	(5) <i>Non-Performance Pay</i>	(6) <i>Non-Performance Pay</i>	(7) <i>Total Pay</i>	(8) <i>Total Pay</i>
Estimation:	Poisson		OLS		Poisson		Poisson	
Treated × Post	-0.630*** [-6.93]	-0.639*** [-6.59]	-0.062*** [-3.60]	-0.072*** [-3.76]	-0.071 [-0.67]	-0.002 [-0.02]	-0.188*** [-2.76]	-0.137** [-2.19]
Firm Size		0.176* [1.95]		0.022 [0.93]		-0.082 [-0.83]		-0.001 [-0.01]
Stock Return		0.097** [2.49]		0.013 [1.25]		0.089** [2.25]		0.106*** [2.88]
ROA		-0.381* [-1.69]		-0.029 [-0.65]		-0.302* [-1.80]		-0.442** [-2.24]
Leverage		-0.162 [-0.72]		-0.005 [-0.08]		0.227 [0.93]		0.055 [0.46]
NDTL		-0.214 [-0.40]		-0.125 [-0.72]		-0.226 [-0.26]		-0.025 [-0.07]
NOL		-0.130*** [-2.65]		-0.020 [-1.38]		0.001 [0.02]		-0.070* [-1.86]
Observations	9,343	7,915	9,574	8,100	9,574	8,100	9,574	8,100
R-squared	0.732	0.742	0.706	0.719	0.719	0.749	0.762	0.785
CEO-Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y

Table IA.8. Robustness: OLS Regressions Using Log-Specifications

This table reports the treatment effect of the Tax Cuts and Jobs Act (TCJA) on CEO pay. *Treated* is a dummy variable equal to one if a firm had above-median performance-based pay in the period before TCJA enactment, and zero otherwise. *Post* is a dummy variable equal to one if a firm's fiscal year starts after January 1, 2018, and zero otherwise. *CEO* is a dummy variable equal to one if the executive is the firm's CEO, and zero otherwise. The sample in Panel A includes firms' CEOs and in Panel B it includes firms' CEOs as well as other executives ranked below top five in terms of total compensation. The sample period spans fiscal year ends from September 30, 2015 to November 30, 2021, excluding the three-month period prior to the TCJA's effective date (January 1, 2018). The dependent variable in Panel A is log of CEO performance pay in specification 1; log of CEO non-performance pay in specifications 2; and log of total CEO pay in specification 3. The dependent variable in Panel B is log of executive performance pay in specification 1; log of executive non-performance pay in specification 2; and log of total executive pay in specification 3. The model is estimated using OLS regressions. Standard errors are clustered at the firm level. *t*-statistics based on these clustered standard errors are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Appendix B.

Panel A: CEO Compensation (Difference-in-Differences)

<i>Dependent Variable:</i>	(1) <i>Log(Performance Pay)</i>	(2) <i>Log(Non-Performance Pay)</i>	(3) <i>Log(Total Pay)</i>
Treated × Post	-0.315*** [-10.73]	-0.183*** [-6.60]	-0.258*** [-10.97]
Observations	13,145	14,663	14,680
R-squared	0.852	0.721	0.800
CEO-Firm FE	Y	Y	Y
Year FE	Y	Y	Y

Panel B: Executive Compensation (Triple Differences)

<i>Dependent Variable:</i>	(1) <i>Log(Performance Pay)</i>	(2) <i>Log(Non-Performance Pay)</i>	(3) <i>Log(Total Pay)</i>
Treated × Post × CEO	-0.473*** [-7.27]	-0.068 [-1.32]	-0.231*** [-4.89]
Observations	6,231	6,857	6,899
R-squared	0.904	0.875	0.917
Firm-Year FE	Y	Y	Y
CEO-Year FE	Y	Y	Y
CEO-Treated FE	Y	Y	Y

Table IA.9. Robustness: Quantile Regressions

This table reports the treatment effect of the Tax Cuts and Jobs Act (TCJA) on CEO pay using quantile regressions using 25th, 50th, and 75th percentiles of the data. *Treated* is a dummy variable equal to one if a firm had above-median performance-based pay in the period before TCJA enactment, and zero otherwise. *Post* is a dummy variable equal to one if a firm's fiscal year starts after January 1, 2018, and zero otherwise. *CEO* is a dummy variable equal to one if the executive is the firm's CEO, and zero otherwise. The sample in Panel A includes firms' CEOs and in Panel B it includes firms' CEOs as well as other executives ranked below top five in terms of total compensation. The sample period spans fiscal year ends from September 30, 2015 to November 30, 2021, excluding the three-month period prior to the TCJA's effective date (January 1, 2018). The dependent variable is log of CEO performance pay in specifications 1-3; CEO performance pay normalized by total compensation in specifications 4-6, log of CEO non-performance pay in specifications 7-9; and log of total CEO pay in specifications 10-12. Standard errors are clustered at the firm level. *t*-statistics based on these clustered standard errors are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Appendix B.

<i>Dependent Variable:</i>	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Log(Performance Pay)</i>			<i>% Performance Pay</i>		
<i>Quantile:</i>	25	50	75	25	50	75
Treated × Post	-0.272*** [-10.15]	-0.315*** [-13.45]	-0.356*** [-14.51]	-0.039*** [-5.47]	-0.043*** [-7.08]	-0.045*** [-7.61]
Observations	14,156	14,156	14,156	15,741	15,741	15,741
CEO-Firm FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y

<i>Dependent Variable:</i>	(7)	(8)	(9)	(10)	(11)	(12)
	<i>Log(Non-Performance Pay)</i>			<i>Log(Total Pay)</i>		
<i>Quantile:</i>	25	50	75	25	50	75
Treated × Post	-0.197*** [-7.80]	-0.184*** [-8.19]	-0.168*** [-7.21]	-0.256*** [-11.34]	-0.257*** [-13.51]	-0.258*** [-13.34]
Observations	15,721	15,721	15,721	15,741	15,741	15,741
CEO-Firm FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y

Table IA.10. Robustness: Excluding Covid Period, Excluding Firms with CEO Turnover, Continuous Treatment, and Short Post-Period

This table reports the treatment effect of the Tax Cuts and Jobs Act (TCJA) on CEO pay. *Post* is equal to one if a firm's fiscal year starts after January 1, 2018, and zero otherwise. *CEO* is equal to one if the executive is the firm's CEO, and zero otherwise. *Treated* is equal to one if a firm had above-median performance-based pay in the period before TCJA enactment, and zero otherwise. *PV Pay Pre* equals the level of the CEO's performance pay in the year before the TCJA. The sample in Panel A spans fiscal year ends from September 30, 2015, to December 31, 2019, excluding the three-month period prior to the TCJA's effective date. The sample in Panel B covers fiscal year ends from September 30, 2015, to November 30, 2021, excluding the three-month period prior to the TCJA's effective date (January 1, 2018) and excluding all firms that experienced CEO turnover during the sample period. The sample in Panel C covers fiscal year ends from September 30, 2015, to November 30, 2021, excluding the three-month period prior to the TCJA's effective date. The sample in Panel D covers fiscal year ends from September 30, 2017, to November 30, 2019, also excluding the three-month period prior to the TCJA's effective date. In all panels, the dependent variable is CEO (executive) performance pay in specification 1 (2); CEO (executive) performance pay normalized by total compensation in specification 3 (4); non-performance CEO (executive) pay in specification 5 (6); and total CEO (executive) compensation in specification 7 (8). The model is estimated using Poisson regressions in specifications 1–2 and 5–8 (where the dependent variables are measured in dollar amounts) and OLS regressions in specifications 3–4 (where the dependent variable is a ratio). *t*-statistics based on clustered standard errors are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in Appendix B.

Panel A: Excluding Covid Period

<i>Dep. Variable:</i>	(1) <i>Performance Pay</i>	(2) <i>Performance Pay</i>	(3) <i>% Performance Pay</i>	(4) <i>% Performance Pay</i>	(5) <i>Non-Performance Pay</i>	(6) <i>Non-Performance Pay</i>	(7) <i>Total Pay</i>	(8) <i>Total Pay</i>
Treated × Post	-0.481*** [-13.68]		-0.032*** [-4.15]		-0.175*** [-5.50]		-0.245*** [-9.13]	
Treated × Post × CEO		-0.383*** [-4.40]		-0.067*** [-3.93]		0.054 [0.73]		-0.152** [-2.39]
Observations	10,938	5,269	11,463	5,448	11,463	5,448	11,463	5,448
R-squared	0.837	0.937	0.765	0.773	0.753	0.918	0.823	0.947
CEO-Firm FE	Y	N	Y	N	Y	N	Y	N
Year FE	Y	N	Y	N	Y	N	Y	N
Firm-Year FE	N	Y	N	Y	N	Y	N	Y
CEO-Year FE	N	Y	N	Y	N	Y	N	Y
CEO-Treated FE	N	Y	N	Y	N	Y	N	Y

Panel B: Excluding Firms with CEO Turnover

<i>Dep. Variable:</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>Performance Pay</i>		<i>% Performance Pay</i>		<i>Non-Performance Pay</i>		<i>Total Pay</i>	
Treated × Post	-0.590*** [-13.82]		-0.038*** [-4.27]		-0.211*** [-5.97]		-0.283*** [-9.43]	
Treated × Post × CEO		-0.297*** [-2.73]		-0.043* [-1.92]		0.049 [0.48]		-0.097 [-1.09]
Observations	9,009	3,105	9,477	3,222	9,477	3,222	9,477	3,222
R-squared	0.815	0.944	0.745	0.787	0.724	0.933	0.791	0.955
CEO-Firm FE	Y	N	Y	N	Y	N	Y	N
Year FE	Y	N	Y	N	Y	N	Y	N
Firm-Year FE	N	Y	N	Y	N	Y	N	Y
CEO-Year FE	N	Y	N	Y	N	Y	N	Y
CEO-Treated FE	N	Y	N	Y	N	Y	N	Y

Panel C: Continuous Treatment Pre-TCJA

<i>Dep. Variable:</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>Performance Pay</i>		<i>% Performance Pay</i>		<i>Non-Performance Pay</i>		<i>Total Pay</i>	
PV Pay Pre × Post	-0.052*** [-13.42]		-0.007*** [-5.69]		-0.022*** [-4.69]		-0.033*** [-8.62]	
PV Pay Pre × Post × CEO		-0.046*** [-3.44]		-0.009*** [-3.45]		-0.014 [-1.12]		-0.031*** [-2.93]
Observations	13,499	5,048	14,075	5,210	14,075	5,210	14,075	5,210
R-squared	0.827	0.938	0.746	0.773	0.744	0.921	0.821	0.950
CEO-Firm FE	Y	N	Y	N	Y	N	Y	N
Year FE	Y	N	Y	N	Y	N	Y	N
Firm-Year FE	N	Y	N	Y	N	Y	N	Y
CEO-Year FE	N	Y	N	Y	N	Y	N	Y
CEO-Treated FE	N	Y	N	Y	N	Y	N	Y

Panel D: Restricting Sample to [-1, +1] Window Around TCJA's Passage

<i>Dep. Variable:</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>Performance Pay</i>		<i>% Performance Pay</i>		<i>Non-Performance Pay</i>		<i>Total Pay</i>	
Treated × Post	-0.433*** [-8.98]		-0.022** [-2.09]		-0.208*** [-4.76]		-0.275*** [-7.18]	
Treated × Post × CEO		-0.209* [-1.72]		-0.053** [-2.20]		0.233** [1.98]		0.082 [0.77]
Observations	4,050	2,209	4,346	2,276	4,346	2,276	4,346	2,276
R-squared	0.900	0.935	0.868	0.770	0.836	0.912	0.878	0.942
CEO-Firm FE	Y	N	Y	N	Y	N	Y	N
Year FE	Y	N	Y	N	Y	N	Y	N
Firm-Year FE	N	Y	N	Y	N	Y	N	Y
CEO-Year FE	N	Y	N	Y	N	Y	N	Y
CEO-Treated FE	N	Y	N	Y	N	Y	N	Y

Table IA.11. Placebo Tests

This table reports the results of placebo tests. In Panel A, firms are classified into placebo treated and control groups based on their GVKEYs. *Treated (Placebo)* is a dummy variable equal to one if a firm has an odd GVKEY, and zero otherwise. *Post* is a dummy variable equal to one if a firm's fiscal year starts after January 1, 2018, and zero otherwise. *Treated* is a dummy variable equal to one if a firm had above-median performance-based pay in the period before TCJA enactment, and zero otherwise. The dependent variable in Panel A is CEO performance pay in specification 1; CEO performance pay normalized by total compensation in specification 2; non-performance CEO pay in specification 3; and total CEO compensation in specification 4. The dependent variable in Panel B is the log of the value of non-executive option grants per employee. Standard errors are clustered at the firm level. The model is estimated using Poisson regressions in specifications 1 and 3-4 in Panel A, and OLS regressions in Panel B and specification 2 of Panel A. *t*-statistics based on these clustered standard errors are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Appendix B.

Panel A: Placebo Test Using Firms with Odd GVKEYs as Treated Group

<i>Dependent Variable:</i>	(1) <i>Performance Pay</i>	(2) <i>% Performance Pay</i>	(3) <i>Non-Performance Pay</i>	(4) <i>Total Pay</i>
Estimation:	Poisson	OLS	Poisson	Poisson
Treated (Placebo) $\times$ Post	0.023 [0.76]	0.000 [0.05]	0.012 [0.43]	0.013 [0.54]
Observations	14,052	14,680	14,680	14,680
R-squared	0.806	0.741	0.722	0.793
CEO-Firm FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y

Panel B: Placebo Test Using Options Granted per Employee and Stock-Based Compensation per Employee

<i>Dependent Variable:</i>	(1)	(2)
	<i>Log(Option Grants/Employee)</i>	
Treated $\times$ Post	0.027 [0.39]	-0.021 [-0.27]
Firm Size		-0.076 [-0.94]
Stock Return		0.232*** [5.35]
ROA		0.175 [1.05]
Leverage		-0.138 [-0.69]
NDTL		0.271 [0.36]
NOL		-0.022 [-0.26]
Observations	6,756	5,573
R-squared	0.869	0.866
Firm FE	Y	Y
Year FE	Y	Y