

In the Nick of Time: Performance-Based Compensation and Proactive Responses to the Tax Cuts and Jobs Act

Jon Durrant

James Jianxin Gong

California State University, Fullerton

Jennifer Howard

California State University, Long Beach

ABSTRACT: The Tax Cuts and Jobs Act of 2017 (TCJA) introduced two major changes that may influence executive compensation: (1) reducing corporate tax rates from 35 to 21 percent, and (2) eliminating the performance-based pay exception in Section 162(m). These changes provide incentives to maximize deductible compensation expense in 2017, before the TCJA goes into effect. Consistent with our expectation, we find that the increase in CEO bonus and stock option compensation is significantly greater in 2017 relative to prior years. Our difference-in-differences results are consistent with the tax rate reduction driving the bonus increase and the repeal of the performance-based exception leading to the increase in CEO stock options. The TCJA also changed the definition of covered employees to include the CFO. We find weak evidence for abnormal increases in CFO performance-based compensation. Overall, our findings suggest that firms responded to the TCJA in the period *before* it was effective.

Keywords: executive compensation; employee stock options; performance-based pay; tax reform; Tax Cuts and Jobs Act of 2017; Section 162(m).

I. INTRODUCTION

Congress has often used tax policy to regulate executive pay, for example, to mollify public outcry over the perceived excesses in executive compensation (Murphy and Jensen 2018). Even if the tax incentives or disincentives prove successful at achieving the intended goal, it is often accompanied by unexpected behavioral responses. Section 162(m) was introduced in 1993 and represents the most prominent use of tax law to affect executive compensation in recent history. Section 162(m) deemed executive compensation in excess of \$1 million as “excessive” and limited its deductibility (the “million-dollar rule”). Although it was intended to constrain executive pay, Section 162(m) actually resulted in a dramatic increase in total compensation, because the \$1 million limit did not apply to performance-based compensation (Murphy 2012, 25). The Tax Cuts and Jobs Act of 2017 (TCJA) repeals this exception, which means the favorable tax treatment of performance-based compensation comes to an end in 2017.¹ Slemrod (1990) proposes a hierarchy of behavioral responses to tax policy. The most responsive type of behavior is anticipatory timing responses, followed by financial and accounting responses, and at the bottom are real responses (Slemrod 2018). Therefore, our research objective is to examine whether firms responded proactively, or ahead of, the TCJA. In this paper, we use the term “proactive” as a succinct way of referring to behavioral responses that fall under the old tax regime, i.e., actions that affect the 2017 fiscal period.

This paper has benefited from comments of Scott D. Dyreng (editor), two anonymous referees, Anthony Chen, Ed Lynch, Blair B. Marquardt, and participants at the 2020 The University of North Carolina Tax Symposium.

Jon Durrant and James Jianxin Gong, California State University, Fullerton, College of Business and Economics, Department of Accounting, Fullerton, CA, USA; Jennifer Howard, California State University, Long Beach, Department of Accountancy, Long Beach, CA, USA.

Editor’s note: Accepted by Scott D. Dyreng.

Submitted: August 2019
Accepted: September 2020
Published Online: September 2020

¹ Hereafter, we use “Section 162(m)” to refer to prior law (~1993–2017) and “TCJA” to refer to the recent amendments to the rule.

The TCJA offers a unique setting to study the effect of tax policy on executive compensation because it repeals a major exception to the million-dollar rule. A tax law change that includes a favorable exception, such as the performance-based pay exception under Section 162(m), provides little incentive to take proactive actions but provides strong incentive to exploit the exception after the fact, thus lending itself to an *ex post* analysis. On the other hand, a tax law change that eliminates a favorable tax rule, such as TCJA, will induce proactive responses. In addition, the indispensable nature of executive compensation and competition for talent means that firms cannot simply avoid incurring the nondeductible expense by reducing pay levels to the \$1 million threshold. In effect, the TCJA removes tax considerations from the equation, leaving only nontax factors as determinants of the level and composition of executive pay. Therefore, we believe that studying firm behavior in the period before the TCJA became effective is necessary to gain a full understanding of how the TCJA impacts executive compensation.

The key assumption in our study is that firms anticipated the TCJA and/or had written negative discretion provisions into their executive compensation contracts. First, firms had reason to anticipate the tax reform in 2017. Republicans had been vying for tax reform since 2011 and, after the 2016 elections, controlled both houses of Congress and the presidency. This created an opportunity for Republicans to enact tax legislation unilaterally in 2017. Second, performance-based grants are typically determined *ex post* because certain performance measures, such as earnings, are not available until after year-end. Although actual payouts had to be objectively determined to qualify as performance based, “negative discretion” was permitted as long as the maximum amount was disclosed. However, by setting the disclosed maximum well above the “true” maximum, firms could make upward adjustments to award amounts that appear as downward adjustments to outside parties. We discuss these mechanisms, anticipation and negative discretion, in greater detail in Section II.

Firms had an incentive to respond to the TCJA before it became effective because it (1) repeals the exception that allowed full deductibility of performance-based compensation, and (2) reduces the corporate tax rate from 35 percent to 21 percent. Firms that anticipated the changes to executive compensation deductibility would also expect that preexisting compensation contracts would be grandfathered, as they were under the 1993 transition rule for Section 162(m). The grandfathering of existing compensation arrangements provides an incentive to modify contract terms to maximize both bonus and stock option compensation to preserve deductibility of performance-based pay in future years. Additionally, lowering the tax rate to 21 percent provides the incentive to accelerate expenses into 2017 to claim deductions at the higher pre-TCJA tax rates. The tax rate reduction incentivizes an increase in compensation expense only if it is immediately deductible. Since performance-based bonuses are deductible in the year accrued, both TCJA changes would incentivize an increase in bonuses in 2017. On the other hand, stock option grants do not generate an immediate deduction; rather, they are deductible in future years when the options are exercised. Therefore, only the repeal of the performance-based exception provides incentive to increase in stock options in 2017.

We examine annual changes in two performance-based components of executive compensation, bonuses and stock options, and predict that the increase in 2017 was atypically large relative to previous years.² To test our hypotheses, we use a balanced panel consisting of 1,398 firms with sufficient data from Execucomp, Compustat, and CRSP for the period 2015–2017. Our univariate results indicate that, on average, the 2017 increase in bonuses (stock options) granted to CEOs was \$65,930 (\$127,200) higher than in previous years. Regression estimates suggest that the increase in CEO bonuses (stock options) was 18 percent (47 percent) higher in 2017 than in the previous two years. Falsification test results confirm that the atypical increase in bonuses and stock options was unique to 2017 and not present in other years. Also, we do not find a significant increase in 2017 when we apply our analysis to nonperformance-based measures (salary and restricted stock). Overall, our results show that the 2017 increase in performance-based compensation was higher than in previous years, consistent with our hypothesis that firms will increase compensation in an attempt to lock in and/or maximize the deductibility of existing performance-based compensation before the tax reform becomes effective.

We also use a difference-in-differences research design. Following prior research, we use the \$1 million threshold to differentiate between treatment and control groups (e.g., [Rose and Wolfram 2002](#)). If CEO salary in 2016 exceeds \$1 million, the firm is classified as a treatment firm, and those with salary below \$1 million are control firms. This classification ensures that all performance-based compensation of treatment firms will be subject to the new rules. Both treatment and control firms would benefit from deducting bonus compensation in 2017 before the tax rate reduction takes effect. Consistent with this argument, we do not find that the atypical increase in bonuses in 2017 was greater for treatment firms relative to control firms. In contrast, we find that the increase in stock option awards in 2017 is larger in the treatment group than the

² For brevity, the term “bonus” refers to performance-based bonus compensation throughout our paper. We note that bonuses may or may not be performance based. To ensure that we are not inadvertently picking up nonperformance-based bonuses, we use the non-equity incentive variable (NONEQ_INCENT) from Execucomp for empirical analysis. We do not use Execucomp’s BONUS variable because the data definition does not clearly indicate that it is performance based and, therefore, it may include discretionary bonus compensation.

control group. Overall, these results provide support for our conjecture that firms responded not only to the tax rate reduction, but also the repeal of the performance-based exception.

Prior to the TCJA, CFOs were not subject to the \$1 million cap.³ After the TCJA, CFOs are automatically covered employees subject to the million-dollar limitation. Companies have the same incentives to increase CFO bonuses and stock options as they do for CEO compensation. We find that results for the CFO are generally weaker, smaller in magnitude, and/or less consistent compared to the CEO results. This is not surprising, as CFO pay is about one-third of CEO pay and has smaller variation in change. In addition, fewer CFOs have total compensation above \$1 million than CEOs, so the Section 162(m) limitation will affect fewer CFOs than CEOs.

This study adds to our understanding of the relation between tax policy and executive pay by documenting that firms took actions to maximize and/or maintain full deductibility of performance-based compensation before the deduction was eliminated. Our results add to the evidence of unintended consequences of tax regulation on executive compensation (Murphy and Jensen 2018). Prior literature generally finds that firms responded to the Section 162(m) limitation on nonperformance-based compensation by lowering salaries to \$1 million following its enactment (Perry and Zenner 2001; Rose and Wolfram 2002) and increasing salaries to exactly \$1 million (Harris and Livingstone 2002). Two concurrent papers also examine TCJA and executive compensation. Luna, Schuchard, and Stanley (2020) argue that firms may increase CEO salary in 2018 because the TCJA removes the tax penalty for nonperformance-based pay. They also predict a decrease in total compensation because the TCJA increased its after-tax cost. They find some evidence of higher CEO salary but no difference in total compensation after the TCJA. De Simone, McClure, and Stomberg (2020) also argue that the TCJA increases the after-tax cost of executive pay and predict a decrease in performance-based pay in 2018. They also predict that eliminating the tax penalty for fixed pay will tilt the compensation mix away from performance-based pay, potentially reducing the need to compensate risk-averse managers, which could lead to a decrease in total compensation. They do not find evidence of a change in total compensation or compensation mix in 2018. These two studies test for a response after the TCJA became effective, which is in line with prior research on Section 162(m). Our study differs in that we examine compensation change *before* the TCJA became effective and find that firms responded proactively in the year the TCJA was passed. As such, our study complements De Simone et al. (2020) and Luna et al. (2020).

The remainder of this paper is organized as follows: Section II describes the institutional background, reviews literature, and develops hypotheses, Section III provides a description of the research design, Section IV describes the sampling process and sample statistics, Section V presents empirical results, and Section VI describes additional analyses. Last, Section VII concludes the study.

II. BACKGROUND AND HYPOTHESIS DEVELOPMENT

Tax Treatment of Performance-Based Compensation

In 1993, the Omnibus Budget Reconciliation Act added Section 162(m) to the tax code. Section 162(m) limits the deductibility of executive compensation to \$1 million paid to each “covered employee,” i.e., the CEO and three highest paid executives other than the CFO.⁴ However, the rule included an important exemption for performance-based compensation. A number of conditions had to be met to qualify as performance-based compensation, e.g., performance goals are predetermined, based on objective formulae, and material terms are disclosed.⁵ While salary is obviously subject to the limitation, most bonuses and stock options will qualify for the performance-based exemption (Hall and Liebman 2000). Stock options automatically qualify as performance based if the exercise price is set at or above the market price at grant date and the maximum amount was specified in the shareholder-approved plan.⁶ Performance-based bonus payouts are deductible in the year that the compensation expense was incurred, as long as the payment is made within 2.5 months after year-end.⁷ The tax benefit from stock option awards is not realized until they are exercised. Most option grants vest over three to five years and must be exercised within ten years from grant date (Hall 1999). Thus, unlike incentive bonus and long-term cash incentives, stock option grants do not generate an immediate deduction.

³ Before the TCJA, covered employees per Section 162(m) included the CEO and the next three top paid executives.

⁴ IRS Notice 2007-49 amended Section 162(m) to exclude the CFO and was effective during our sample period. Section 162(m) initially defined covered employees as the CEO and the next four highest paid officers, for a total of five covered employees.

⁵ Reg. § 1.162-27(e)(2).

⁶ The plan must state the maximum number of shares with respect to what options may be granted during a specified period.

⁷ Reg. § 1.404(b)-1T and Rev. Rul. 2011-29.

The TCJA amended Section 162(m) in several ways. Most importantly, the Act repeals the exception for performance-based compensation, limiting the deductibility of total compensation paid to a covered executive to \$1 million. Furthermore, the TCJA modifies the definition of covered employees to specifically include the CFO.

Related Literature

Several studies examine the post-1993 consequences of the \$1 million cap on nonperformance-based pay (e.g., salary) and full deductibility of performance-based pay. Not surprisingly, the evidence shows a decrease in salaries that previously exceeded \$1 million (Perry and Zenner 2001; Rose and Wolfram 2002). Interestingly, companies also increase salaries that were previously below the \$1 million threshold (Harris and Livingstone 2002). Moreover, the differential tax treatment shifted the composition of executive compensation toward performance-based pay and increased total pay; however, Hall and Liebman (2000) suggest that the substitution effect was modest and attribute the increase in total compensation to nontax factors. In contrast, Murphy (2013) argues that Section 162(m) was in large part responsible for the significant increase in options during the 1990s. Overall, prior research suggests that Section 162(m) altered the structure of executive compensation for many firms.

Hypothesis Development

In this section, we present two mechanisms by which firms could have done so: (1) anticipation, and (2) negative discretion. Firms that anticipated the changes were better able to respond by modifying executive compensation plans (e.g., contract terms) before the TCJA than those that did not anticipate the changes. Nonetheless, firms in the latter category with a negative discretion clause in their incentive compensation plans could still, technically speaking, exhibit a response to TCJA in 2017.

Anticipation

Tax reform. There were several reasons to expect tax reform was on the horizon in 2017. First, Congressional momentum for tax reform had been building for several years (Baucus and Camp 2013; KPMG 2016a), and Republicans have been calling for tax reform since taking over the House in 2011 (Faler 2016). Apple Inc.'s CEO, Tim Cook, was optimistic about tax reform occurring in 2017, even before the 2016 presidential election (Fitzpatrick 2016; Athanasiou 2017). Second, the 2016 elections resulted in Republican control of the House, Senate, and White House, paving the way for partisan tax reform (KPMG 2016b). With 52 seats in the Senate, Republicans could use the budget reconciliation process to pass a tax reform bill with a party-line vote.⁸ Third, Republicans and the Trump administration faced increased pressure to deliver on at least one major campaign promise (e.g., a tax cut proposal), after failing to repeal the Affordable Care Act (Davis and Rappoport 2017; Stewart 2017).

Executive compensation. To pass under budget reconciliation rules, the tax bill could not increase the deficit by more than \$1.5 trillion.⁹ However, Republicans' tax proposals touted numerous tax cuts that were estimated to reduce tax revenues by \$5.8 trillion over ten years (Bryan 2017), but the proposals were largely silent on how they would be paid for. Therefore, any revenue raisers that have been included in past tax reform proposals could be on the table (KPMG 2016b). In particular, the 2014 Camp plan, the most comprehensive tax reform proposal since 1986, offered many base-broadening provisions, including eliminating popular business tax breaks. Thus, "policymakers [could have been] expected to consider the 'base-broadeners' (and other reform proposals) in the Camp bill as they craft the details of the tax reform legislation" (KPMG 2016b, 2017). Indeed, the TCJA appears to borrow heavily from the Camp plan.¹⁰

Some firms anticipated the changes to the tax treatment of executive compensation because the Camp plan had targeted executive compensation as an offset for corporate tax cuts.¹¹ Criticisms about the high levels of CEO pay continued to be in the

⁸ Instead of 60 votes, a reconciliation bill requires only a majority vote in the Senate.

⁹ The Byrd Rule defines any provision that increases the deficit for any year outside of the reconciliation period (usually ten years) as "extraneous" and not eligible for the reconciliation process. The budget resolution allowed for tax reform as long as the ten-year estimated cost did not exceed \$1.5 trillion.

¹⁰ Some similarities between the TCJA and the 2014 Camp plan include (1) elimination of the tax on repatriated dividends, (2) a one-time transition tax on unrepatriated foreign profits, (3) a new tax on intangible profits of subsidiaries located in low-tax foreign countries (e.g., Global Intangible Low Taxed Income [GILTI Tax]), (4) a reduction of corporate tax rates to be more consistent with average corporate rates of OECD countries (25 percent rate), and (5) limits on the deductibility of interest expense using a percentage of adjusted taxable income test.

¹¹ Compensation-related provisions in the Camp plan included (1) eliminating the performance-based exception to the \$1 million limitation, (2) changing the definition of "covered employee" to include the CFO, and (3) charging a 25 percent excess tax on compensation in excess of \$1 million for non-profit organizations, all of which were incorporated into the TCJA.

spotlight in 2017 (e.g., Clifford and Anderson 2017), and in January 2017, Democrats introduced the Stop Subsidizing Multimillion Dollar Corporate Bonuses Act, which called for an end to the exception for performance-based compensation.¹² Weinstein (2017) also suggested eliminating the exemption for performance-based pay to offset the cost of lowering the corporate tax rate (Weinstein 2017). Closing this “loophole” was estimated to raise over \$50 billion in federal revenues.¹³ Last, eliminating the exception for performance-based compensation is unlikely to elicit pushback/pressure from special interest groups because it would impact a wide variety of firms and thus is relatively safe from special interests lobbyists.

Negative Discretion

Tax reform is difficult because of the tradeoffs that must be made and agreed upon, which means that it is also difficult to predict. Some firms may have taken a more conservative approach and waited until the detailed tax reform bill was introduced and/or passed. These firms could still take actions to maximize tax benefits from performance-based compensation before the TCJA becomes effective. Even though these actions would have taken place in 2018, we view them as proactive in the sense that they affect the tax year before the TCJA. Furthermore, the negative discretion provision must have been written into the contract before the TCJA.

To maintain deductibility under Section 162(m), discretion could only be used to make downward adjustments (i.e., negative discretion).¹⁴ In theory, negative discretion means that the compensation committee pays less than the maximum upon attainment of the performance goals without losing deductibility.¹⁵ Consequently, it became “almost universal for plans to be worded in a way that gives the compensation committee the right to use discretion in determining final payouts” (Deloitte 2018).

Negative discretion gave firms the latitude to use qualitative judgment in awarding grants and circumvent restrictions on discretionary payouts. Companies also found creative ways to use negative discretion to allow for greater flexibility and even to facilitate positive discretion. Many companies adopted a “plan-within-a-plan” (or “umbrella plan”), whereby the “outside” plan sets the maximum award amount and meets the shareholder approval requirements, and the “inside” plan provides the details about the performance goals that will actually be used to determine final payouts. The inside plan pays less than the maximum and often has little overlap with the outside plan (Murphy 2012, 25). As a result, a plan could be designed to effectively allow for positive discretion by setting the maximum as high as the “gross national product of third world countries” (Ellig 2014). By setting the disclosed maximum higher than the “true” or desired maximum, firms could make upward adjustments to award amounts that appear as downward adjustments to outside parties. In Appendix B, we provide excerpts from the proxy statements describing the use of negative discretion to determine actual award amounts.

Transition (Grandfather) Rule

It would have been reasonable to assume that preexisting contracts would be grandfathered as they were when Section 162(m) was first introduced. Indeed, the TCJA transition rule is almost identical to the 1993 transition rule for Section 162(m), which grandfathered written binding contracts in effect before February 17, 1993 and not materially modified thereafter.¹⁶ However, there was no clear guidance as to which contracts or agreements would fit the definition of “written binding contract” or what exactly would be considered a “material modification.” Initial guidance was issued by the IRS on August 21, 2018 (Notice 2018-68). Thus, there remained an element of anticipation regarding the operation of the grandfather rule.

Predictions

First, we predict that the increase in CEO bonus payouts in 2017 is larger than the amount that would have been awarded if not for the TCJA. Institutional Shareholder Services (ISS 2018), a proxy advisory firm, reports that many amended bonus plan proposals were placed on the ballot in 2017 to preserve Section 162(m) benefits. In addition, firms may have accelerated 2018 bonus payments into 2017 to claim the deduction at the higher pre-TCJA tax rates (Joint Committee on Taxation 2020). ISS (2018) also reports that some companies indeed accelerated award payouts that were originally supposed to be paid in 2018 to the end of 2017. These anecdotes suggest that firms believed the tax benefit outweighed the costs of accelerating bonuses into 2018. Additionally, the reduction of the corporate tax rate from 35 to 21 percent was a tax windfall for many corporations,

¹² See, <https://execcomp.org/News/NewsStories/house-and-senate-democrats-re-introduce-162m-bill-in-preparation-for-tax-reform-debate>.

¹³ See, <https://doggett.house.gov/media-center/press-releases/rep-lloyd-doggett-joins-sens-reed-blumenthal-end-special-tax-exemptions>.

¹⁴ Reg. § 1.162-27(e)(2)(iii), Conf Rept No. 103-213 (PL 103-66) p. 587.

¹⁵ Negative discretion, or downward adjustments, is also a way to mitigate the “*ex post* settling up” problem, which occurs when managers are rewarded for expected future cash flows that do not materialize. *Ex post* settling up is costly because it is difficult to recover the payouts after the fact. From an empirical standpoint, the literature generally interprets asymmetric sensitivity of cash compensation to stock returns as evidence of *ex post* settling up (e.g., Leone, Wu, and Zimmerman 2006; Albuquerque, Chen, Dong, and Riedl 2019).

¹⁶ Reg. § 1.162-27(h).

which reduced future tax payments and, for many firms, resulted in a favorable tax accrual adjustment that increased after-tax net income.¹⁷ This may have increased the ability of firms to pay executive compensation. Therefore, we expect the growth in CEO bonus compensation to be greater in 2017 than in previous years and state our first hypothesis as follows:

H1a: The increase in CEO bonus compensation in 2017 is higher than the increase in previous years.

Similarly, we predict a proactive increase in stock option awards in 2017. Unlike bonus compensation, stock options do not require any cash layout and are generally perceived as a low cost form of compensation (Murphy 2002). Another notable difference from bonuses is that stock option compensation is not deductible until the options are exercised. Consequently, the change in corporate tax rates is unlikely to provide an incentive to increase stock option compensation. However, we may still observe an increase in stock options if firms indeed anticipated that the performance-based exception would be repealed and modified option incentive plans accordingly. As discussed in the previous section, compensation committees could also use discretion as to the exact amount of stock options granted. Therefore, our second hypothesis is as follows:

H1b: The increase in CEO stock option compensation in 2017 is higher than the increase in previous years.

Under prior law, CFO compensation was not subject to the \$1 million limit before the TCJA. Given that the Camp plan called for the limit to apply to CFOs, firms may have also anticipated the changes to the deductibility of CFO compensation. Our predictions for changes in CFO compensation mirror our predictions for CEO compensation; however, we expect CFO compensation will be less responsive to the TCJA than CEO compensation. First, CFO pay is generally much less than CEO pay, and thus generates a smaller tax benefit. In our sample, CFO pay is about one-third of CEO pay. Murphy and Oyer (2003, 27) report that half of their sample CFOs are not even among the five highest paid executives. Therefore, it is an empirical question as to whether the TCJA also induced proactive changes to CFO compensation.

H2a: The increase in CFO bonus compensation in 2017 is higher than the increase in previous years.

H2b: The increase in CFO stock option compensation in 2017 is higher than the increase in previous years.

Costs and Benefits Estimation

The premise of our study is that firms changed their behavior in response to tax policy; however, shareholders would only want the firm to do so if the benefits outweigh the costs. Assuming existing incentive plans are grandfathered, we estimate the costs and benefits for the average firm in our sample. If total compensation paid to all top five executives is deductible, the tax savings amount to approximately \$3.06 million annually.¹⁸ Dividing this figure by the average pretax book income before special items translates into a 0.43 percentage point reduction in effective tax rates (ETR). As a comparison point, we note that prior research has found, on average, tax havens reduce ETR by about 1.5 percentage points (Dyreg and Lindsey 2009). However, this calculation assumes all compensation is performance based. For a more conservative estimate, we assume only bonus and stock options are performance based and estimate about \$1.44 million in annual tax savings.¹⁹ Thus, the potential tax benefit ranges from \$1.44 to \$3.06 million per year.

For a cost estimate, we examine the increase in performance-based compensation in 2017 relative to the base period (2015–2016). The total increase in 2017 for the top five executives was \$360,625 (\$271,255 for bonuses, and \$89,370 for options). The combined cost of \$404,700 is about 0.037 percent of pretax book income (average pretax book income in 2017 was \$986 million). However, Figure 1, Panel A shows that the change in 2018 is substantially smaller compared to 2017 for bonuses and negative for options, which suggests that the abnormal increase in 2017 was due to intertemporal shifting of compensation expenses. If expenses are merely shifted into 2017 from 2018, then the cost of paying executives more compensation in 2017 would be offset by paying less in 2018. In summary, the costs and benefits depend on assumptions and are difficult to measure, regardless of the assumptions made, the costs are relatively small, while the potential benefits may be very large.

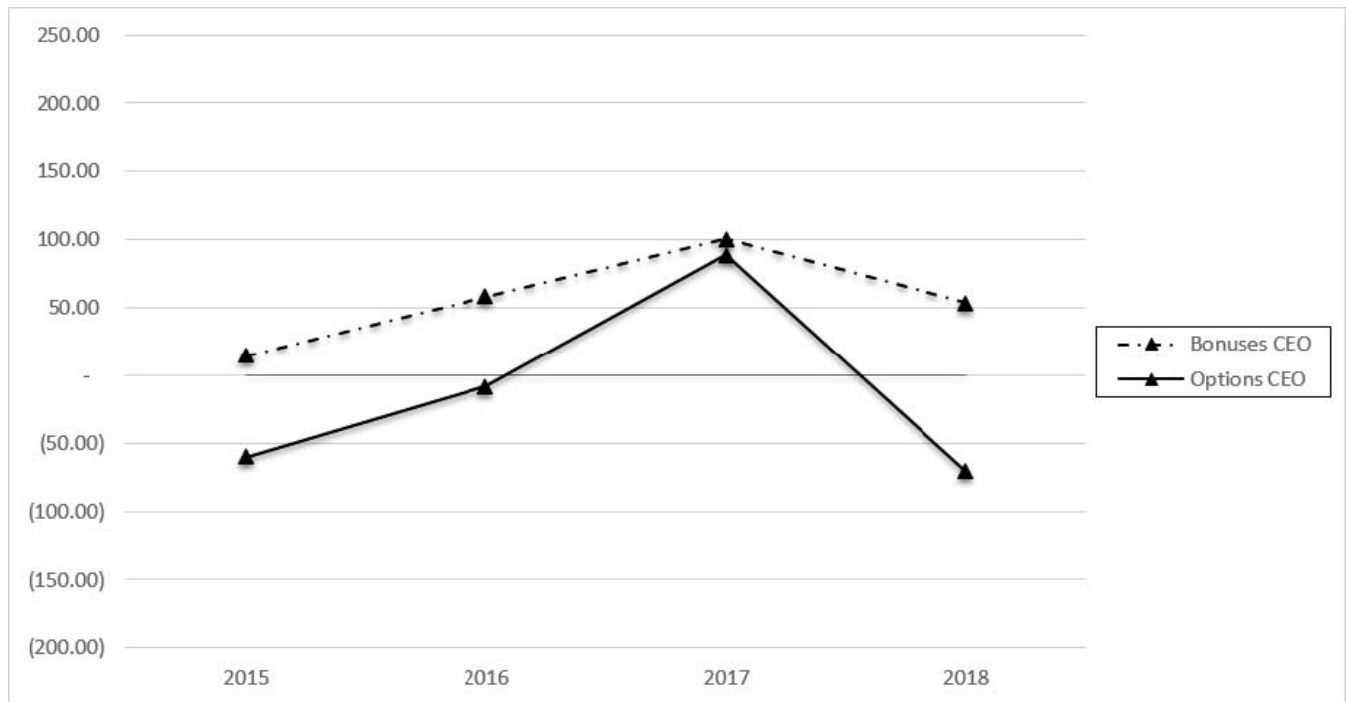
¹⁷ Deferred tax assets and liabilities are valued based on estimated future tax benefits. Accordingly, deferred tax accounts would need to be revalued at the lower tax rate (21 percent) instead of the pre-TCJA tax rate (35 percent). As a result, the tax rate reduction would have resulted in a large one-time tax benefit to firms with large deferred tax liabilities and a large one-time expense for firms with large deferred tax assets.

¹⁸ In our sample, the mean total compensation for the top five named executive officers (NEOs) is \$16.752 million. We subtract \$5 million to account for the deductibility of the first \$1 million paid to each executive, resulting in a \$11.752 million deduction per year if the contracts are grandfathered for all five executives. We use the current rate of 26 percent (federal tax rate of 21 percent plus 5 percent for state tax) to estimate tax savings.

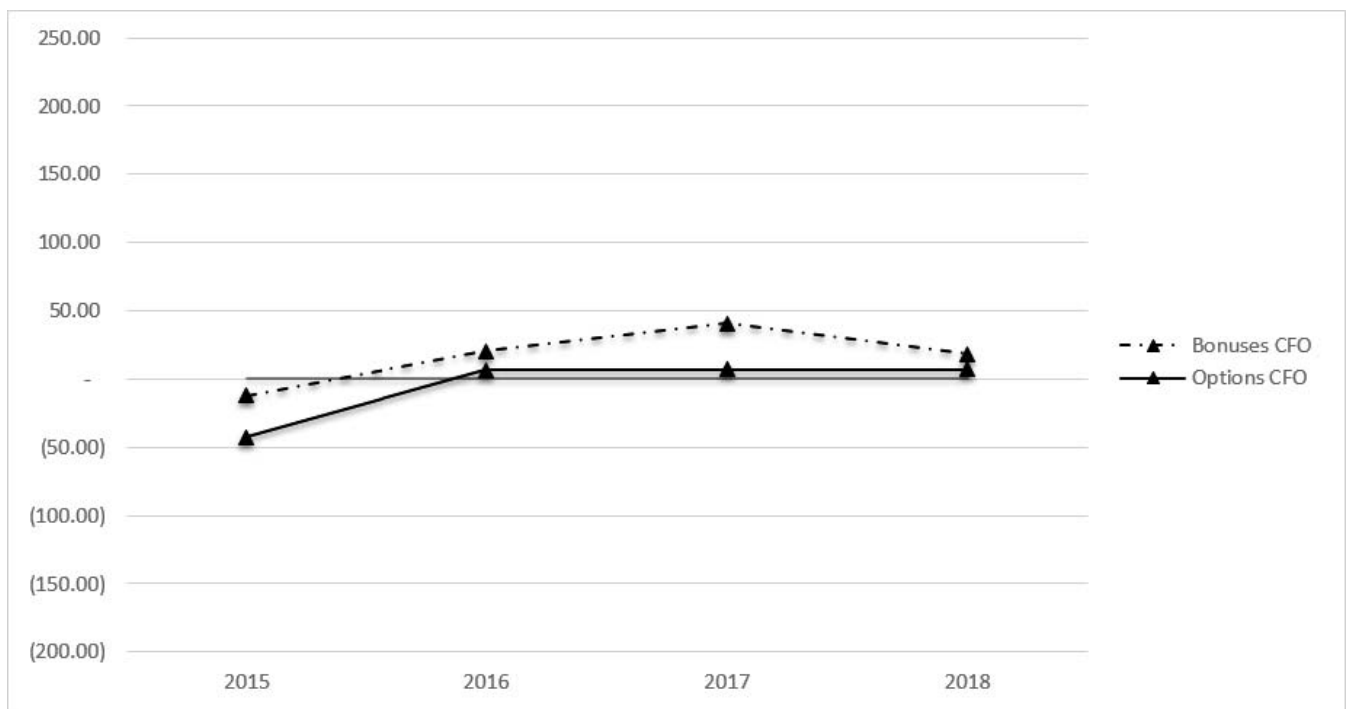
¹⁹ Bonus and stock option compensation for the top five executives sums to \$5.54 million for the average firm in our sample. We use the current rate of 26 percent (federal tax rate of 21 percent plus 5 percent for state tax) to estimate the tax benefit.

FIGURE 1
Changes in Compensation

Panel A: Average Δ in Performance-Based CEO Compensation



Panel B: Average Δ in Performance-Based CFO Compensation



III. RESEARCH DESIGN

Regression Models

To investigate whether firms responded proactively to the executive compensation provisions in the TCJA, we examine changes in bonus and stock option compensation over the three-year period preceding the year in which the TCJA becomes effective for each firm (2015 through 2017). For our main analysis, we use the following model to test our hypotheses:

$$\Delta Comp_{i,t} = \alpha_0 + \alpha_1 Y2017_t + Controls_{i,t} + Industry FE + \varepsilon \quad (1)$$

In the models presented, $\Delta Comp$ serves as a placeholder for the natural log of either $\Delta Bonus$ or $\Delta Options$, representing the change from year $t-1$ to year t .²⁰ We use the change, rather than level of compensation, as a way to mitigate concerns that higher compensation in 2017 relative to compensation in prior years is due to a broader trend of increasing compensation.²¹ Because the TCJA is effective for tax years beginning January 1, 2018 or later, we define $Y2017$ as equal to 1 if the beginning of the fiscal year is between January 1, 2017 and December 31, 2017, and 0 otherwise.²² A positive coefficient on $Y2017$ would be consistent with our hypothesis that the TCJA provided incentives to maximize performance-based compensation before the new law took effect.

Difference-in-Differences Models

We also perform an analysis using a difference-in-differences test using the following model:

$$\Delta Comp_{i,t} = \beta_0 + \beta_1 Y2017_t + \beta_2 Treatment_i + \beta_3 Y2017_t * Treatment_i + Controls_{i,t} + Industry FE + \varepsilon \quad (2)$$

Because the Section 162(m) limitation applies to compensation in excess of \$1 million, firms with lower compensation levels will be unaffected by the new compensation-specific rules under the TCJA. We separate these firms into treatment and control groups based on CEO salary in 2016. If CEO salary exceeds \$1 million, the firm is classified as a treatment firm, and those with salary below \$1 million are control firms.²³ This classification ensures that the treatment firms are affected by the tax law changes; however, it is less clear whether and to what extent the control firms are affected. Nonetheless, most of our control firms will not be affected by the repeal of the performance-based exception and if they are, it will be to a much lesser extent compared to treatment firms. Therefore, we expect a smaller or no reaction among control firms.

Preparation Time Model

In supplemental analysis, we also consider whether firms had enough time to modify incentive plans in anticipation of the TCJA occurring in 2017. The model presented below is the same as Model 1, except $Y2017$ is broken into two indicator variables: $Y2017_LongPrep$ and $Y2017_ShortPrep$. A firm with an earlier beginning date will have more time in that fiscal period to adjust compensation before the passage of the TCJA than a firm with a later start date.

$$\Delta Comp_{i,t} = \gamma_0 + \gamma_1 Y2017_LongPrep_t + \gamma_2 Y2017_ShortPrep_t + Controls_{i,t} + Industry FE + \varepsilon \quad (3)$$

$Y2017_LongPrep$ is set to 1 for firms with a fiscal year that begins in the first quarter of 2017, and 0 otherwise. $Y2017_ShortPrep$ is equal to 1 for fiscal years that start between April 1, 2017 and December 31, 2017, and 0 otherwise. $Y2017_LongPrep$ ($Y2017_ShortPrep$) captures firms with more (less) time to modify contract terms before the details of the proposed bill were revealed. For example, $Y2017_LongPrep$ firms would have had from April until November to adjust compensation contracts.²⁴

Control Variables

We also control for other factors associated with changes in executive compensation, such as investment opportunities (*Market to Book*) and firm performance (*ROA*, *Market Return*, *Volatility*, *Revenue Growth*, and *Z-Score*). To control for

²⁰ We use the log transformation because executive compensation is highly skewed.

²¹ Murphy (2013) documents that the level of compensation increases each year, on average, except for recession years. Our sample period does not include any recession years.

²² Observations with partial years have been deleted. This eliminates concerns regarding using the beginning date as a proxy for tax year, and eliminates concerns that the compensation for a partial year is not comparable to a 12-month period.

²³ In addition to the \$1,000,000 threshold, we also create classifications based on salaries of \$900,000, \$800,000 and \$700,000. This is discussed later in Section V.

²⁴ We find similar results when we use alternative cutoffs (February through June) for preparation time.

executive power, we include *Tenure* and *Payslice* (Bebchuk, Cremers, and Peyer 2011).^{25,26} To account for a potential substitution effect, we include *Bonus Indicator* (*Options Indicator*) in the options (bonus) model. We include *NOL* because firms with net operating losses will not benefit from the deduction. We include firm size (*Size*) to account for size-related effects. We include lagged compensation level (*Lag of Ln Comp Level*) because past compensation is an indicator of executive talent (Banker, Darrrough, Huang, and Plehn-Dujowich 2013). We include lagged change in compensation (*Lag of Ln ΔComp*) to account for the possibility of a “mean reversion” effect or the sustainability of large increases in multi-year plan award amounts. Moreover, Imbens and Wooldridge (2009) suggest including lagged outcome variables in program evaluation tests if the treatment and control groups differ in outcomes before the program starts. All variables are defined in Appendix A.

IV. DATA

Sample Selection

Table 1 presents our sample selection procedures. We begin with compensation data from Execucomp for firms with beginning dates between January 1, 2015 and December 31, 2017.²⁷ We obtain financial data from Compustat and market returns from CRSP, and we limit our sample to firms incorporated in the U.S. To create a balanced panel, we restrict our sample to firms that have a valid observation in each year of our sample period, 2015–2017.²⁸ These procedures reduce our sample size to 4,194 firms-year observations and 1,398 firms. For the difference-in-differences analysis, we have 383 (21) treatment firms and 1,015 (1,377) control firms for the CEO (CFO) tests.

Descriptive Statistics

Table 2 presents the summary statistics for the variables used in our analysis. We report the untransformed (unlogged) $\Delta Bonus$, $\Delta Options$, $\Delta Salary$, and $\Delta Stock$ for the CEO and CFO.²⁹ We use logged compensation measures for our regression analysis because compensation variables are generally skewed. As an example, $\Delta Bonus$ for CEOs has a mean of \$57.6 thousand and median of \$0. The average change in performance-based pay is substantially larger for the CEO than the CFO. This is not surprising given that CEOs’ decisions affect firm-wide performance. Untabulated simple correlations confirm that *Y2017* is positively correlated with $\Delta Bonus$ and $\Delta Options$.

Although the level of executive compensation tends to increase over time, it is less clear as to whether the *change* in compensation follows a similar pattern. Figure 1, Panel A suggests that the changes also tend to increase over time before the TCJA and reach their peak in 2017. The decline in 2018 is consistent with the TCJA eliminating the tax incentive to use performance-based pay to compensate CEOs. In most years (other than 2017), the change in options is negative, consistent with the general decline in the use of options. These results are consistent with firms increasing bonuses and options in the year before the TCJA was effective. Panel B shows a similar pattern for the change in CFO bonus, albeit to a lesser degree, but changes in CFO options are relatively flat in 2016 through 2018.

Figure 2 presents the average changes in CEO bonus (Panel A) and options (Panel B) for the treatment and control groups. Both bonuses and options peak in 2017 as in Figure 1, Panel A. In addition, treatment firms have a larger increase in bonuses and stock options in 2017 than control firms. Panel B shows the average change in stock options is negative for both treatment and control firms in all other years (except 2017). The increase in 2017 is much larger for treatment firms than control firms, consistent with the repeal of the performance-based exception having a greater impact on firms with higher levels of compensation. We note that partitioning the sample based on the level of CEO salary inevitably results in larger (smaller) firms being classified as treatment (control). Overall, Figures 1 and 2 offer preliminary evidence in support of our hypotheses H1a, H1b, and H2a, but not H2b.

²⁵ When our dependent variable is ΔCEO (ΔCFO) Compensation we include *CEO Tenure* (*CFO Tenure*).

²⁶ We calculate *Payslice* as the compensation of the executive (either CEO or CFO) divided by the second highest paid executive following (Zagonov and Salganik-Shoshan 2018). They argue that a CEO is unlikely to be dominant (i.e., be a powerful CEO) if the next highest paid executive has similar pay. Additionally, calculating *Payslice* using the top five executives reduced our sample size, as Execucomp did not have five executives for some firms in all years.

²⁷ We find similar results using several different time periods, including a five-year period 2013 through 2018.

²⁸ Our results are similar without this restriction; however, a balanced panel ensures we are comparing the same firms in both periods.

²⁹ For context, in our sample, the average level of CEO compensation in 2016 was \$1.35 million in bonuses, \$751 thousand in options. The total compensation (salary, bonuses, stock, and options) was \$6.32 million.

TABLE 1
Sample Selection

Panel A: Sample Selection Process

Firm-years identified using Execucomp 2015 to 2017	5,395
Less: Observations without sufficient Execucomp years	(129)
Less: Observations without sufficient Compustat data	(52)
Less: Observations that failed to merge with CRSP	(548)
Less: Firms not incorporated in the U.S.	(124)
Less: Firms with missing years	(348)
Total reductions	(1,201)
Total firm-year observations for first set of analyses	4,194

Panel B: Difference-in-Difference Sample

	Treatment CEO Salary ≥ \$1 Million	Control CEO Salary < \$1 Million	Total
Number of Firms	383	1,015	1,398

Table 1 describes our sample selection process. We begin with the Execucomp database for the period 2015–2017. We eliminate observations with missing data from Compustat, CRSP, firms headquartered outside of the U.S., and firms without data for all years (leaving a balanced panel).

V. EMPIRICAL RESULTS

Univariate Results

Table 3 presents the mean values of the compensation variables and tests the difference in means for the two subperiods, 2017 and 2015–2016. Panel A reports the results for performance-based compensation ($\Delta Bonus$ and $\Delta Options$), and Panel B reports the results for nonperformance-based compensation ($\Delta Salary$ and $\Delta Stock$).³⁰ We find similar results for both parametric and non-parametric two-sample t-tests. The increase in CEO bonus was greater in 2017 compared to 2015–2016 by \$65,930 (p-value = 0.041, two-tailed). We also find that the increase in CEO options is greater in 2017 than in the prior two years by \$127,200 (p-value = 0.011, two-tailed). The CFO results are similar to the CEO results but smaller in magnitude and somewhat weaker. Panel B presents the same tests for nonperformance-based compensation. We find no statistically significant difference in $\Delta Salary$ or $\Delta Stock$ across the two periods for either the CEO or CFO, consistent with the fact that the new rules only affect performance-based compensation. Overall, these univariate results support our hypotheses.

Multivariate Results

Table 4 presents the OLS regression results from estimating Model 1. Our variable of interest, Y_{2017} , reflects the difference in the change in compensation in 2017 relative to previous years. Similar to our univariate tests, we find that the coefficient on Y_{2017} is positive and significant in each specification. The first two columns indicate that, on average, the change in CEO bonus (options) is approximately 18 percent (47 percent) higher in 2017 relative to the previous two years, after controlling for alternative explanations.³¹ Thus, the atypically large increase in 2017 is both economically and statistically significant. We find similar results for the CFO, except that estimates are smaller in magnitude (a 1 percent

³⁰ Prior to the TCJA, service-based restricted stock and restricted stock units were not considered performance-based compensation by IRC 162(m). Performance shares, on the other hand, were performance-based compensation by definition. The Execucomp database only reports total stock grants in a year and does not distinguish whether stock awards are performance related. Therefore, we classify all stock grants as nonperformance based. This assumption biases against us finding significant results.

³¹ Expected percentage change is $(e^\beta - 1)$, or $\exp(0.3846) - 1 = 0.4690$.

TABLE 2
Descriptive Statistics

Variable	n	Mean	Std. Dev.	25th Percentile	50th Percentile	75th Percentile
<i>Y2017</i>	4,194	33.33%	0.47	0	0	1
CEO Compensation Changes						
<i>ΔBonus</i>	4,194	57.64	999.62	(200.00)	0	324.90
<i>ΔOptions</i>	4,194	8.22	1,448.71	0	0	0.01
<i>ΔSalary</i>	4,194	13.24	139.86	0	15.77	46.75
<i>ΔStock</i>	4,194	135.12	3,204.40	(244.72)	13.62	699.99
CFO Compensation Changes						
<i>ΔBonus</i>	4,194	16.59	373.36	(81.60)	0	123.71
<i>ΔOptions</i>	4,194	(9.67)	400.33	0	0	0
<i>ΔSalary</i>	4,194	11.34	95.41	0	15.00	35.00
<i>ΔStock</i>	4,194	20.13	1,130.68	(140.90)	2.67	237.50
Control Variables—Firm						
<i>Market to Book</i>	4,194	3.29	6.34	1.48	2.34	3.95
<i>Size</i>	4,194	8.26	1.72	7.03	8.20	9.37
<i>ROA</i>	4,194	3.29%	0.10	0.94%	3.67%	7.43%
<i>NOL</i>	4,194	0.61	0.49	0	1	1
<i>Market Return</i>	4,194	0.12	0.34	(0.08)	0.10	0.30
<i>Volatility</i>	4,194	0.09	0.04	0.06	0.08	0.10
<i>Revenue Growth</i>	4,194	0.06	0.13	(0.01)	0.04	0.11
<i>Z-Score</i>	4,194	3.54	4.01	1.20	2.71	4.53
<i>CEO Tenure</i>	4,194	8.58	7.55	2.90	6.30	12.00
<i>CEO Payslice</i>	4,194	2.15	0.99	1.41	2.06	2.71
<i>CFO Tenure</i>	4,194	6.03	5.38	2.00	5.00	9.00
<i>CFO Payslice</i>	4,194	0.79	0.25	0.61	0.87	1.00
<i>Bonus Indicator</i>	4,194	0.81	0.39	1	1	1
<i>Options Indicator</i>	4,194	0.37	0.48	0	0	1

Table 2 shows the mean, standard deviation, 25th, 50th, and 75th percentile values for the entire sample. The sample period is 2015–2017. Unscaled compensation variables are in thousands of dollars. All continuous variables are winsorized at 1 and 99 percent. Variables are defined in Appendix A.

higher increase for bonuses and a 36 percent increase for options). These results provide evidence in support of our hypotheses (H1a, H1b, H2a, and H2b). Overall, our results show that the 2017 increase in performance-based compensation was higher than in previous years, consistent with our hypothesis that firms will increase compensation in an attempt to lock in and/or maximize the deductibility of existing performance-based compensation before the tax reform becomes effective.

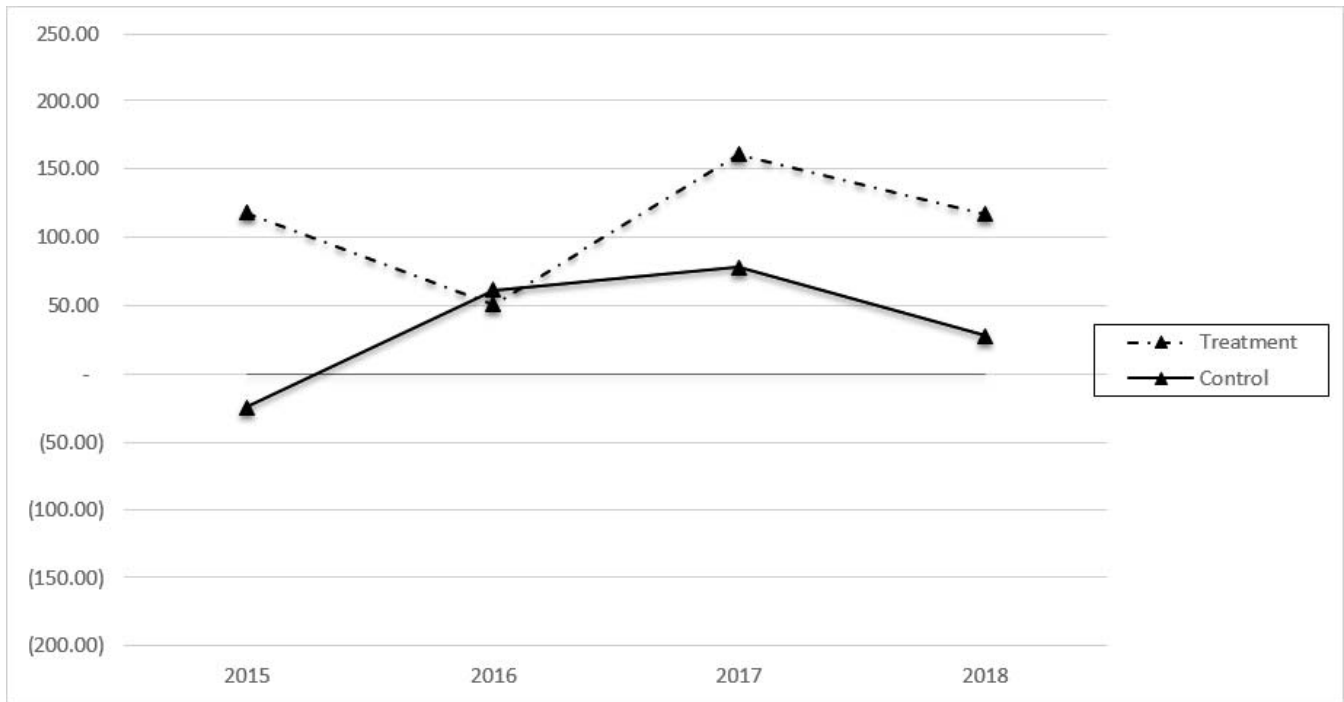
Difference-in-Differences Results

Table 5 presents our difference-in-differences analysis. There are two incentives to boost compensation in 2017: (1) repeal of the performance-based exception and (2) tax rate reduction. Both treatment and control firms would benefit from deducting bonus compensation in 2017 at the higher tax rate. Since both groups have incentive to inflate bonuses in 2017, the difference-in-differences analysis is less likely to provide insight into our bonus hypotheses. Consistent with our conjecture, we do not find a significant coefficient on the interaction term in the bonus models in Panel A. However, *Y2017* remains positive and significant. Taken together, these results indicate that both treatment and control firms increased bonus compensation in the year before the tax law changes took effect.

In contrast, the tax rate change does not provide incentive to maximize stock option compensation in 2017 because it is deductible when exercised, not in the year of grant. Therefore, stock options are incentivized only by the repeal of the performance-based exception, which will only matter to firms that stand to lose from it (i.e., treatment firms). As expected, the

FIGURE 2
Changes in CEO Compensation Treatment versus Control

Panel A: Average Δ in Bonuses for CEO



Panel B: Average Δ in Options for CEO

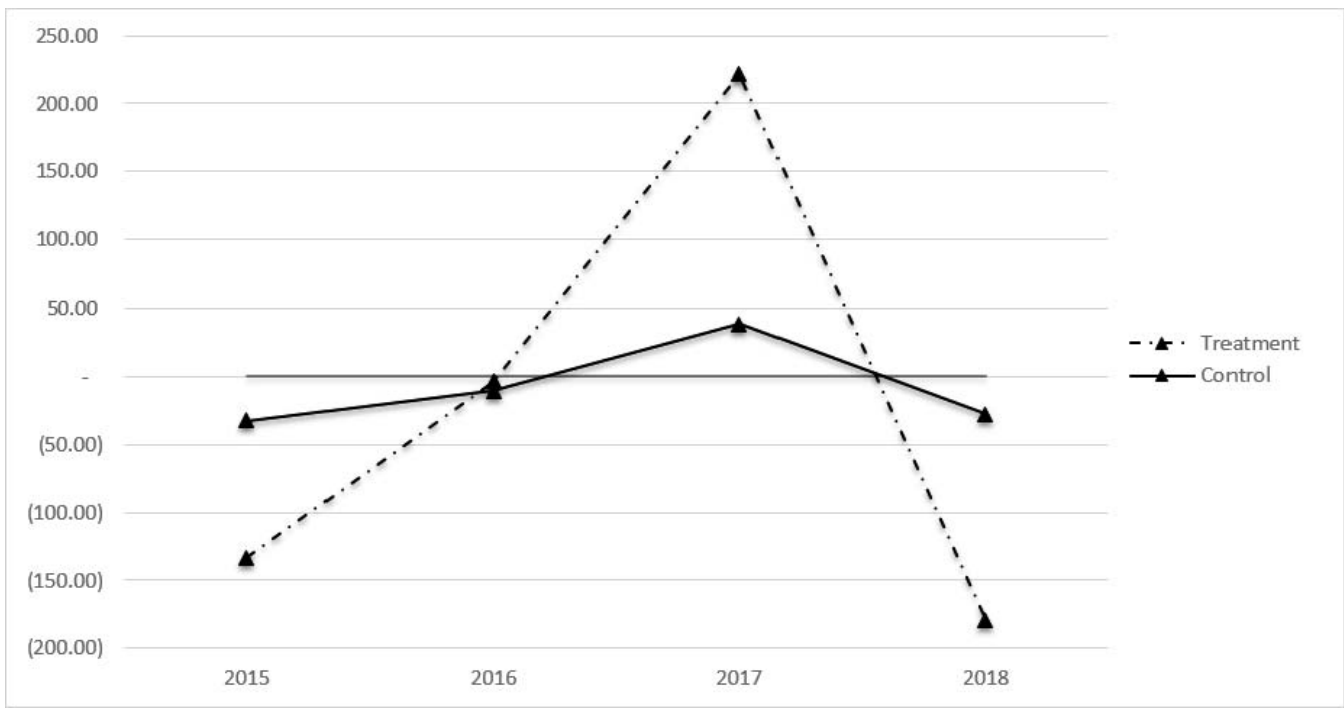


TABLE 3
Differences in Means Tests

Panel A: Increase in Performance-Based Compensation 2017 Compared to 2015 through 2016

	<u>Y2015 and Y2016</u>	<u>Y2017</u>	<u>Difference</u>	<u>t-test (p-value)</u>	<u>Mann-Whitney Test (p-value)</u>
CEO					
Δ Bonus	35.67	101.60	65.93	(0.041)**	(0.002)**
Δ Options	(34.18)	93.02	127.20	(0.011)**	(0.002)**
CFO					
Δ Bonus	3.70	42.36	38.65	(0.011)**	(0.002)**
Δ Options	(18.15)	7.29	25.43	(0.066)*	(0.001)**
n	2,796	1,398			

Panel B: Increase in Nonperformance-Based Compensation 2017 Compared to 2015 through 2016

	<u>Y2015 and Y2016</u>	<u>Y2017</u>	<u>Difference</u>	<u>t-test (p-value)</u>	<u>Mann-Whitney Test (p-value)</u>
CEO					
Δ Salary	14.61	10.52	(4.09)	(0.373)	(0.261)
Δ Stock	107.80	189.70	81.90	(0.477)	(0.122)
CFO					
Δ Salary	11.09	11.83	0.73	(0.820)	(0.192)
Δ Stock	33.90	(7.42)	(41.33)	(0.296)	(0.601)
n	2,796	1,398			

*, **, *** Denote significance at the 0.10, 0.05, and 0.01 levels, respectively (two-tailed).

Table 3 reports the results of four different sets of two-sample t-tests. Fiscal years beginning on January 1, 2017 and later are classified as *Y2017*; other observations are categorized as either *Y2015* or *Y2016*. The first p-value is from a student's t-test, the second is from the non-parametric Mann-Whitney test. Reported p-values are based on two-tailed t-tests. Variables are defined in Appendix A.

coefficient on the difference-in-differences term is positive and significant (p-value = 0.046, two-tailed) for CEO options; however, we do not find a significant result for CFO options.

In Panels B and C, we evaluate whether the above result is sensitive to alternative cutoffs for classifying firms into treatment and control groups: \$900,000, \$800,000, and \$700,000 (Group 1, Group 2, and Group 3, respectively). Results in Panels B and C are similar across the alternative groupings and with Panel A. In Panel D, we include firm fixed effects in the model and reach similar inferences.³² The lack of results in the CFO options regression is not surprising in light of Figure 1, Panel B, which shows that the change in CFO options does not vary between 2016 through 2018. Overall, these results are consistent with our CEO hypotheses and provide evidence indicating that firms responded not only to the tax rate reduction, but also the changes to Section 162(m).

Supplemental Test: Falsification Test

Next, we perform falsification tests using nontreatment years as our variable of interest. Table 6, Column (1) reproduces our main results from Table 4. In Columns (2) and (3), our test variable is an indicator variable designating 2016 and 2015 as treatment years, respectively. Only the specification using the actual treatment year, *Y2017*, is positive and statistically significant for both changes in bonuses and stock options. In Columns (2) and (3), the coefficient on *Y2016* is negative and significant and the coefficient on *Y2015* is not statistically significant, respectively. Therefore, it is unlikely that our results are spurious.

³² Note that *Treatment* drops out because the treatment-control classification is time invariant.

TABLE 4
Test of the Relation Between Change in Compensation and Y2017

	<i>CEO Compensation</i>		<i>CFO Compensation</i>	
	<i>Ln ΔBonus</i> (1)	<i>Ln ΔOptions</i> (2)	<i>Ln ΔBonus</i> (3)	<i>Ln ΔOptions</i> (4)
<i>Y2017</i>	0.16** (0.023)	0.38*** (0.003)	0.01* (0.051)	0.30*** (0.005)
<i>Market to Book</i>	0.00 (0.789)	0.02 (0.178)	0.00 (0.385)	0.01 (0.156)
<i>Size</i>	0.01 (0.801)	0.10* (0.057)	0.00* (0.051)	0.09** (0.017)
<i>ROA</i>	0.18 (0.701)	0.58 (0.452)	0.03 (0.415)	-0.80 (0.256)
<i>NOL</i>	-0.10 (0.155)	-0.01 (0.949)	0.00 (0.358)	-0.12 (0.361)
<i>Market Return</i>	1.16*** (0.000)	0.13 (0.517)	0.11*** (0.000)	0.24 (0.126)
<i>Volatility</i>	-1.68 (0.160)	-4.68** (0.032)	0.01 (0.944)	-5.66*** (0.000)
<i>Revenue Growth</i>	0.07 (0.814)	0.99* (0.081)	-0.02 (0.261)	0.74* (0.072)
<i>Z-Score</i>	-0.03** (0.018)	0.01 (0.506)	0.00** (0.034)	0.04** (0.048)
<i>Tenure</i>	-0.01* (0.091)	0.01 (0.311)	0.00 (0.496)	0.01 (0.143)
<i>Payslice</i>	-0.02 (0.687)	-0.16** (0.019)	-0.07*** (0.000)	-0.62*** (0.003)
<i>Options Indicator</i>	0.01 (0.853)		0.00 (0.835)	
<i>Bonus Indicator</i>		0.52*** (0.007)		0.11 (0.491)
<i>Lag of Ln ΔComp</i>	0.90*** (0.000)	-0.18*** (0.000)	-0.24*** (0.000)	-0.19*** (0.000)
<i>Lag of Ln Comp Level</i>	-0.09*** (0.000)	-0.21*** (0.000)	-0.01*** (0.000)	-0.26*** (0.000)
<i>Intercept</i>	-0.86*** (0.007)	-1.07* (0.099)	0.11*** (0.000)	1.66*** (0.001)
<i>Industry FE</i>	Yes	Yes	Yes	Yes
<i>Observations</i>	4,194	4,194	4,194	4,194
<i>Adj. R²</i>	85.1%	10.2%	22.3%	12.9%

*, **, *** Denote significance at the 0.10, 0.05, and 0.01 levels, respectively (two-tailed). Standard errors are clustered by firm. All regressions include industry fixed effects (two-digit SIC). All regressions use Model 1. *Y2017* is an indicator variable equal to 1 if the firm-year start date is between January 1, 2017 and December 31, 2017.

All other variables are defined in Appendix A.

Supplemental Test: Placebo Test

Like the falsification test, a placebo test provides supporting evidence by showing that the effect is absent when performed on outcomes that should not be affected. In Table 7, we re-estimate our main regression model with nonperformance-based compensation (changes in salary and restricted stock) as the dependent variable. Because the TCJA does not change the tax treatment of nonperformance-based pay, we should not find a statistically significant coefficient on *Y2017* in the salary and stock models. As expected, we do not find that the change in salary or restricted stock was any different in 2017. These results are also consistent with Table 3, where we test the difference in mean values of $\Delta Salary$ and $\Delta Stock$. These placebo tests provide additional support for our hypotheses.

TABLE 5
Control Sample: Difference-in-Differences Design

Panel A: Difference-in-Differences Design (Model 2)

	CEO Compensation		CFO Compensation	
	<i>Ln</i> Δ Bonus (1)	<i>Ln</i> Δ Options (2)	<i>Ln</i> Δ Bonus (3)	<i>Ln</i> Δ Options (4)
<i>Y2017</i>	0.23*** (0.007)	0.23 (0.113)	0.01* (0.054)	0.29*** (0.007)
<i>Treatment</i>	0.30*** (0.005)	0.52** (0.019)	-0.03* (0.075)	0.17 (0.778)
<i>Y2017 * Treatment</i>	-0.23 (0.152)	0.62** (0.047)	-0.002 (0.956)	0.90 (0.492)
<i>Market to Book</i>	0.00 (0.804)	0.02 (0.213)	0.00 (0.385)	0.01 (0.162)
<i>Size</i>	-0.03 (0.313)	-0.02 (0.708)	0.00** (0.026)	0.08** (0.035)
<i>ROA</i>	0.21 (0.651)	0.70 (0.373)	0.03 (0.422)	-0.77 (0.279)
<i>NOL</i>	-0.10 (0.153)	-0.02 (0.905)	-0.01 (0.319)	-0.11 (0.379)
<i>Market Return</i>	1.17*** (0.000)	0.13 (0.508)	0.11*** (0.000)	0.25 (0.115)
<i>Volatility</i>	-1.77 (0.140)	-4.71** (0.030)	0.01 (0.921)	-5.70*** (0.000)
<i>Revenue Growth</i>	0.11 (0.679)	1.13** (0.047)	-0.02 (0.246)	0.75* (0.070)
<i>Z-Score</i>	-0.03** (0.014)	0.01 (0.562)	0.00** (0.038)	0.04* (0.051)
<i>Tenure</i>	-0.01* (0.055)	0.00 (0.554)	0.00 (0.489)	0.01 (0.151)
<i>Payslice</i>	-0.02 (0.533)	-0.20*** (0.006)	-0.07*** (0.000)	-0.63*** (0.002)
<i>Options Indicator</i>	0.01 (0.874)		-0.001 (0.856)	
<i>Bonus Indicator</i>		0.35** (0.031)		0.04 (0.727)
<i>Lag of Ln ΔComp</i>	0.90*** (0.000)	-0.18*** (0.000)	-0.24*** (0.000)	-0.19*** (0.000)
<i>Lag of Ln Comp Level</i>	-0.10*** (0.000)	-0.21*** (0.000)	-0.01*** (0.000)	-0.26*** (0.000)
<i>Intercept</i>	-0.71** (0.032)	-0.34 (0.599)	0.11*** (0.000)	1.81*** (0.000)
<i>Industry FE</i>	Yes	Yes	Yes	Yes
<i>Observations</i>	4,194	4,194	4,194	4,194
<i>Adj. R²</i>	85.1%	10.6%	22.3%	13.0%

*, **, *** Denote significance at the 0.10, 0.05, and 0.01 levels, respectively (two-tailed). Standard errors are clustered by firm. All regressions include industry fixed effects (two-digit SIC). *Treatment* is an indicator variable equal to 1 if the salary was greater than \$1 million, and 0 otherwise. CEO regressions have 383 treatment firms, and 1,015 control firms. CFO regressions have 21 treatment firms, and 1,377 control firms. All other variables are defined in Appendix A.

(continued on next page)

TABLE 5 (continued)

Panel B: Difference-in-Differences Design (Model 2) Various CEO Treatment/Control Groups

	Group 1		Group 2		Group 3	
	<i>Ln</i> Δ Bonus (1)	<i>Ln</i> Δ Options (2)	<i>Ln</i> Δ Bonus (3)	<i>Ln</i> Δ Options (4)	<i>Ln</i> Δ Bonus (5)	<i>Ln</i> Δ Options (6)
<i>Y2017</i>	0.20** (0.030)	0.10 (0.514)	0.22** (0.046)	0.14 (0.381)	0.25* (0.055)	0.03 (0.885)
<i>Treatment</i>	0.32*** (0.002)	0.17 (0.373)	0.37*** (0.000)	0.28 (0.126)	0.30*** (0.006)	0.13 (0.458)
<i>Y2017 * Treatment</i>	-0.08 (0.598)	0.67** (0.012)	-0.08 (0.566)	0.45* (0.076)	-0.12 (0.457)	0.52** (0.041)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,194	4,194	4,194	4,194	4,194	4,194
Adj. R ²	85.1%	10.4%	85.1%	10.4%	85.1%	10.3%

Panel C: Treatment and Control Group Totals

	Panel A	Group 1	Group 2	Group 3
Treatment	1,149	1,830	2,325	2,886
Control	3,045	2,364	1,869	1,308
	4,194	4,194	4,194	4,194

Group 1: Creates treatment and control based on CEO salary of \$900,000 instead of \$1 million.

Group 2: Creates treatment and control based on CEO salary of \$800,000 instead of \$1 million.

Group 3: Creates treatment and control based on CEO salary of \$700,000 instead of \$1 million.

Panel D: Firm Fixed Effects

	CEO Compensation		CFO Compensation	
	<i>Ln</i> Δ Bonus	<i>Ln</i> Δ Options	<i>Ln</i> Δ Bonus	<i>Ln</i> Δ Options
<i>Y2017</i>	0.29*** (0.001)	0.046 (0.759)	0.017*** (0.000)	0.054 (0.613)
<i>Y2017 * Treatment</i>	-0.21* (0.087)	0.552** (0.019)	-0.029 (0.204)	0.099 (0.451)
Firm FE	Yes	Yes	Yes	Yes
Observations	4,194	4,194	4,194	4,194
Adj. R ²	86.6%	35.3%	40.5%	37.1%

*, **, *** Denote significance at the 0.10, 0.05, and 0.01 levels, respectively (two-tailed).

Standard errors are clustered by firm. All regressions include industry fixed effects (two-digit SIC). In Panel D, *Treatment* is an indicator variable equal to 1 if the salary was greater than \$1 million, and 0 otherwise. CEO regressions have 383 treatment firms and 1,015 control firms. CFO regressions have 21 treatment firms and 1,377 control firms.

All other variables are defined in Appendix A.

VI. ADDITIONAL ANALYSES

Tests of Preparation Time

In Table 8, we test whether firms had enough time to modify incentive plans in anticipation of the TCJA occurring in 2017. We find positive and significant coefficients on *Y2017_LongPrep* in both bonuses and options regressions and for both CEO and CFO. On the other hand, *Y2017_ShortPrep* is not statistically significant. These results suggest that firms with longer time to prepare for the tax law change were more likely to have abnormally large increases in performance-based compensation in 2017. These results are suggestive of firms anticipating changes in the TCJA, but they are not conclusive.

TABLE 6
Supplemental Falsification Tests

Panel A: CEO Bonus

	(1)	(2)	(3)
<i>Y2017</i>	0.16** (0.023)		
<i>Y2016</i>		-0.22*** (0.003)	
<i>Y2015</i>			0.05 (0.479)
Controls	Yes	Yes	Yes
Observations	4,194	4,194	4,194
Adj. R ²	85.1%	85.1%	85.1%

Panel B: CEO Options

	(1)	(2)	(3)
<i>Y2017</i>	0.38*** (0.003)		
<i>Y2016</i>		-0.27* (0.049)	
<i>Y2015</i>			-0.14 (0.331)
Controls	Yes	Yes	Yes
Observations	4,194	4,194	4,194
Adj. R ²	10.2%	10.1%	10.0%

*, **, *** Denote significance at the 0.10, 0.05, and 0.01 levels, respectively (two-tailed). Standard errors are clustered by firm. All regressions include industry fixed effects (two-digit SIC). Column (1) reproduces results from Table 4. All regression models follow the general form presented in Model 1. *Y2017* is an indicator variable equal to 1 if the firm-year start date is between January 1, 2017 and December 31, 2017. *Y2016* is an indicator variable equal to 1 if the firm-year start date is between January 1, 2016 and December 31, 2016. *Y2015* is an indicator variable equal to 1 if the firm-year start date is between January 1, 2015 and December 31, 2015.

Tax Incentives

Firms paying higher levels of tax may be more concerned about losing tax deductions and are more likely to attempt to maximize deductions. If the 2017 increase in CEO compensation is tax motivated, then our main results may be concentrated among firms based on tax characteristics. Table 9 presents the results from estimating Model 1 using subsamples partitioned based on effective tax rates (ETR) and book-tax differences (Khurana and Moser 2013). Results support our prediction that more highly tax motivated firms are more likely to take actions to mitigate their losses from unfavorable changes in the upcoming tax reform by attempting to maximize the deductibility of executive compensation under the old rules.³³

VII. CONCLUSION

Historically, the most responsive type of behavior is anticipatory timing responses to tax policy (Slemrod 2018). In this study, we examine whether firms responded to the TCJA in 2017 before it went into effect. As originally enacted in 1993, Section 162(m) limited the deductibility of executive compensation to \$1 million but provided an exception for compensation that qualified as performance based. The TCJA eliminates the performance-based exception and thus subjects all forms of executive compensation, even if performance based, to the \$1 million limitation on deductibility. Therefore, the TCJA further

³³ We also bifurcate our sample based on Cash ETR (untabulated) and find similar results for CEO and CFO Δ Options, i.e., high tax firms are more likely to increase options in 2017. We do not find this result for Δ Bonus for either CEO or CFO. This may suggest that firms with higher cash tax payments were less willing or unable to increase bonuses due to cash constraints.

TABLE 7
Supplemental Placebo Test: Nonperformance Compensation

	<i>CEO Compensation</i>		<i>CFO Compensation</i>	
	<i>Ln ΔSalary</i> (1)	<i>Ln ΔStock</i> (2)	<i>Ln ΔSalary</i> (3)	<i>Ln ΔStock</i> (4)
<i>Y2017</i>	0.08 (0.422)	0.08 (0.689)	0.07 (0.448)	-0.10 (0.562)
<i>Market to Book</i>	0.01 (0.599)	0.01 (0.595)	0.01 (0.183)	0.03** (0.020)
<i>Size</i>	-0.06 (0.109)	0.04 (0.572)	0.51*** (0.000)	0.09 (0.194)
<i>ROA</i>	2.23*** (0.002)	3.64*** (0.002)	0.88 (0.172)	2.38** (0.021)
<i>NOL</i>	-0.17 (0.135)	0.39* (0.064)	-0.10 (0.370)	0.27 (0.136)
<i>Market Return</i>	0.05 (0.762)	0.15 (0.604)	0.18 (0.190)	0.08 (0.732)
<i>Volatility</i>	-4.70*** (0.006)	-8.11*** (0.009)	-1.52 (0.354)	-5.29** (0.046)
<i>Revenue Growth</i>	3.25*** (0.000)	1.74** (0.019)	1.71*** (0.000)	1.18* (0.060)
<i>Z-Score</i>	-0.02 (0.240)	-0.01 (0.714)	0.00 (0.781)	0.00 (0.858)
<i>Tenure</i>	0.03*** (0.000)	-0.03** (0.010)	0.12*** (0.000)	0.03** (0.014)
<i>Payslice</i>	-0.02 (0.777)	-0.47*** (0.000)	-0.39* (0.064)	-2.46*** (0.000)
<i>Lag of Ln ΔComp</i>	-0.08*** (0.000)	-0.23*** (0.000)	-0.14*** (0.000)	-0.23*** (0.000)
<i>Lag of Ln Comp Level</i>	-0.06 (0.371)	-0.23*** (0.000)	-2.52*** (0.000)	-0.36*** (0.000)
Intercept	2.32*** (0.000)	-0.41 (0.630)	12.55*** (0.000)	6.46*** (0.000)
Industry FE	Yes	Yes	Yes	Yes
Observations	4,194	4,194	4,194	4,194
Adj. R ²	5.8%	11.3%	14.0%	14.2%

*, **, *** Denote significance at the 0.10, 0.05, and 0.01 levels, respectively (two-tailed).

Standard errors are clustered by firm. All regressions include industry fixed effects (two-digit SIC). All regressions use Model 1. *Y2017* is an indicator variable equal to 1 if the firm-year start date is between January 1, 2017 and December 31, 2017.

All other variables are defined in Appendix A.

limits the deductibility of executive compensation. In addition, the TCJA reduces the tax rate, providing incentive to shift expenses into 2017. We hypothesize that firms deviated from their normal course of granting bonuses and stock options in 2017 as a last-ditch attempt to maximize compensation deductions under the old rules and at the higher pre-TCJA tax rate. We argue that firms may have anticipated the evolution and passage of the TCJA and proactively revised their contracts. Firms that did not anticipate the new tax law could still, technically speaking, exhibit a response to the TCJA in 2017 because performance-based awards are often determined *ex post*. We estimate that, on average, if our sample of firms can maintain the tax deductibility of all top five executives, they can save approximately \$3.23 million annually in tax, which translates into an approximate reduction of 0.45 percent in effective tax rate (ETR).

Consistent with our prediction, we find an abnormal increase in CEO bonus and stock option grants in 2017. Our difference-in-differences results provide support for our conjecture that firms responded not only to the tax rate reduction, but also the repeal of the performance-based exception. The two TCJA incentives have differing implications for bonuses and stock options across treatment and control firms. We do not find evidence of a differential increase in bonuses between treatment and

TABLE 8
Supplemental Tests of Preparation Time

	<i>CEO Compensation</i>		<i>CFO Compensation</i>	
	<i>Ln ΔBonus</i> (1)	<i>Ln ΔOptions</i> (2)	<i>Ln ΔBonus</i> (3)	<i>Ln ΔOptions</i> (4)
<i>Y2017_LongPrep</i>	0.21*** (0.006)	0.46*** (0.000)	0.01** (0.049)	0.35*** (0.002)
<i>Y2017_ShortPrep</i>	-0.01 (0.920)	0.08 (0.775)	0.01 (0.583)	0.11 (0.602)
Industry FE	Yes	Yes	Yes	Yes
Observations	4,194	4,194	4,194	4,194
Adj. R ²	85.1%	10.2%	22.3%	13.0%
Count of <i>Y2017_LongPrep</i>	1,094			
Count of <i>Y2017_ShortPrep</i>	274			
Total 2017 Firm-Years	1,368			

*, **, *** Denote significance at the 0.10, 0.05, and 0.01 levels, respectively (two-tailed). Standard errors are clustered by firm. All regressions include industry fixed effects (two-digit SIC). All regressions use Model 1. *Y2017_LongPrep* is an indicator variable equal to 1 if the firm-year start date is between January 1, 2017 and March 31, 2017. *Y2017_ShortPrep* is an indicator variable equal to 1 if the firm-year start date is between April 1, 2017 and December 31, 2017. All other variables are defined in Appendix A.

TABLE 9
Supplemental Test on Tax Incentives

Panel A: High/Low Taxes: ETR

	<i>Ln CEO ΔBonus</i>		<i>Ln CEO ΔOptions</i>		<i>Ln CFO ΔBonus</i>		<i>Ln CFO ΔOptions</i>	
	(1) Low Taxes	(2) High Taxes	(3) Low Taxes	(4) High Taxes	(5) Low Taxes	(6) High Taxes	(7) Low Taxes	(8) High Taxes
<i>Y2017</i>	0.08 (0.453)	0.26** (0.010)	0.22 (0.242)	0.55*** (0.002)	0.01 (0.113)	0.01 (0.106)	0.20 (0.187)	0.41*** (0.006)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,097	2,097	2,097	2,097	2,097	2,097	2,097	2,097
Adj. R ²	85.9%	84.7%	11.4%	12.8%	25.2%	22.5%	14.6%	14.1%

Panel B: High/Low Taxes: Book Tax Differences

	<i>Ln CEO ΔBonus</i>		<i>Ln CEO ΔOptions</i>		<i>Ln CFO ΔBonus</i>		<i>Ln CFO ΔOptions</i>	
	(1) Low Taxes	(2) High Taxes	(3) Low Taxes	(4) High Taxes	(5) Low Taxes	(6) High Taxes	(7) Low Taxes	(8) High Taxes
<i>Y2017</i>	0.08 (0.409)	0.20* (0.067)	0.15 (0.429)	0.57*** (0.002)	0.00 (0.678)	0.02*** (0.006)	0.21 (0.173)	0.33*** (0.024)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,097	2,097	2,097	2,097	2,097	2,097	2,097	2,097
Adj. R ²	86.9%	83.8%	11.3%	11.7%	24.7%	23.3%	12.8%	16.7%

*, **, *** Denote significance at the 0.10, 0.05, and 0.01 levels, respectively (two-tailed). Standard errors are clustered by firm. All regressions include industry fixed effects (two-digit SIC). Panel A reports the results using high/low tax subsamples based on above/below median ETR. In Panel B, high tax firms are firms with low book tax differences. Variables are defined in Appendix A.

control groups, consistent with all firms benefitting from deducting bonus compensation in 2017 before the tax rate reduction takes effect. On the other hand, since stock options are not deductible until exercised, a tax-motivated increase in stock options in 2017 cannot be attributed to the tax rate reduction. Accordingly, we find that treatment firms increased stock options more than control firms, suggesting that it is driven by the repeal of the performance-based exception.

The effect of tax policies on executive pay is a fertile area for executive compensation research (Murphy 2013; Murphy and Jensen 2018). Executive incentive provision is a complex process, driven by economic, political, and regulatory factors; yet, the effect of tax policies on executive compensation is an under-researched area (Murphy 2013).³⁴ Our evidence emphasizes the importance of taking into consideration not only *ex post* behavioral responses, but also potential behavioral responses that take place before the new policy takes effect. Policymakers should take into consideration potential anticipatory responses when evaluating a new policy.

REFERENCES

- Albuquerque, A., B. Chen, Q. Dong, and E. J. Riedl. 2019. *Ex post* settling up in cash compensation: New evidence. *Contemporary Accounting Research* 36 (4): 2283–2318. <https://doi.org/10.1111/1911-3846.12503>
- Altman, E. 1968. Financial ratios, discriminant analysis, and the prediction of corporate bankruptcy. *Journal of Finance* 23 (4): 589–609.
- Athanasiou, A. 2017. Apple CEO optimistic about 2017 tax reform. *Tax Notes Today International* (February 2).
- Banker, R., M. N. Darrough, R. Huang, and J. M. Plehn-Dujowich. 2013. The relation between CEO compensation and past performance. *The Accounting Review* 88 (1): 1–30. <https://doi.org/10.2308/accr-50274>
- Baucus, M., and D. Camp. 2013. Tax reform is very much alive and doable. *Wall Street Journal* (April 8).
- Bebchuk, L. A., K. J. M. Cremers, and U. C. Peyer. 2011. The CEO pay slice. *Journal of Financial Economics* 102 (1): 199–221. <https://doi.org/10.1016/j.jfineco.2011.05.006>
- Bratten, B., and Y. Xue. 2017. Institutional ownership and CEO equity incentives. *Journal of Management Accounting Research* 29 (3): 55–77. <https://doi.org/10.2308/jmar-51599>
- Bryan, B. 2017. *Republicans have a \$700 billion problem that could make their new tax plan nearly impossible*. Available at: <https://www.businessinsider.com/trump-tax-reform-plan-budget-process-makes-it-difficult-2017-9>
- Cadman, B., and M. E. Carter. 2014. Compensation peer groups and their relation with CEO pay. *Journal of Management Accounting Research* 26 (1): 57–82. <https://doi.org/10.2308/jmar-50598>
- Clifford, S., and S. Anderson. 2017. *It's time for Trump to do something about high CEO pay*. Available at: <https://fortune.com/2017/06/07/donald-trump-high-ceo-pay/>
- Conyon, M., and L. He. 2004. Compensation committees and CEO compensation incentives in U.S. entrepreneurial firms. *Journal of Management Accounting Research* 16 (1): 35–56. <https://doi.org/10.2308/jmar.2004.16.1.35>
- Core, J. E., R. W. Holthausen, and D. F. Larcker. 1999. Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics* 51 (3): 371–406. [https://doi.org/10.1016/S0304-405X\(98\)00058-0](https://doi.org/10.1016/S0304-405X(98)00058-0)
- Davis, J. H., and A. Rappeport. 2017. *Trump is said to see cutting the corporate tax rate to 15 percent*. Available at: <https://www.nytimes.com/2017/04/24/us/politics/trump-corporate-tax-rate-15-percent.html>
- De Simone, L., C. McClure, and B. Stomberg. 2020. *Examining the immediate effects of recent tax law changes on the structure of executive compensation*. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3400877
- Deloitte. 2018. *How tax reform may affect executive compensation*. Available at: <https://deloitte.wsj.com/cfo/2018/02/05/how-tax-reform-may-affect-executive-compensation/>
- Dyregang, S. D., and B. P. Lindsey. 2009. Using financial accounting data to examine the effect of foreign operations located in tax havens and other countries on U.S. multinational firms' tax rates. *Journal of Accounting Research* 47 (5): 1283–1316. <https://doi.org/10.1111/j.1475-679X.2009.00346.x>
- Ellig, B. R. 2014. *The Complete Guide to Executive Compensation*. 3rd edition. New York, NY: McGraw-Hill Education.
- Faler, B. 2016. *After much tax reform talk, House GOP finally agrees on a plan*. Available at: <https://www.politico.com/story/2016/06/house-republicans-tax-reform-224749>
- Fitzpatrick, A. 2016. *What Apple CEO Tim Cook really thinks about corporate taxes*. Available at: <https://time.com/4452336/apple-ceo-tim-cook-corporate-tax-reform/>
- Forst, A., M. S. Park, and B. Wier. 2014. Insider entrenchment and CEO compensation: Evidence from initial public offering firms. *Journal of Management Accounting Research* 26 (1): 101–120. <https://doi.org/10.2308/jmar-50622>
- Hall, B. J. 1999. The design of multi-year stock option plans. *Journal of Applied Corporate Finance* 12 (2): 97–106. <https://doi.org/10.1111/j.1745-6622.1999.tb00011.x>

³⁴ Prior literature in management accounting has examined the roles of optimal contracting (Core, Holthausen, and Larcker 1999), compensation committee (Conyon and He 2004), institutional investors (Bratten and Xue 2017), insider entrenchment (Forst, Park, and Wier 2014), and peer group selection (Cadman and Carter 2014) in the executive pay setting.

- Hall, B. J., and J. B. Liebman. 2000. The taxation of executive compensation. *Tax Policy and the Economy* 14 (1): 1–44. <https://doi.org/10.1086/654701>
- Harris, D. G., and J. R. Livingstone. 2002. Federal tax legislation as an implicit contracting cost benchmark: The definition of excessive executive compensation. *The Accounting Review* 77 (4): 997–1018. <https://doi.org/10.2308/accr.2002.77.4.997>
- Imbens, G. W., and J. M. Wooldridge. 2009. Recent developments in the econometrics of program evaluation. *Journal of Economic Literature* 47 (1): 5–86. <https://doi.org/10.1257/jel.47.1.5>
- Institutional Shareholder Services (ISS). 2018. *U.S. Tax Reform: Changes to 162(m) and implications for investors*. Available at: <https://corpgov.law.harvard.edu/2018/01/25/u-s-tax-reform-changes-to-162m-and-implications-for-investors/>
- John, K., H. Mehran, and Y. Qian. 2010. Outside monitoring and CEO compensation in the banking industry. *Journal of Corporate Finance* 16 (4): 383–399.
- Joint Committee on Taxation. 2020. *Corporate tax receipts and corporate tax liabilities (JCX-4-20)*. Available at: <https://www.jct.gov/publications/2020/jcx-4-20/>
- Khurana, I., and W. Moser. 2013. Institutional shareholders' investment horizons and tax avoidance. *The Journal of the American Taxation Association* 35 (1): 111–134. <https://doi.org/10.2308/atax-50315>
- KPMG. 2016a. *The Trump administration and tax reform*. Available at: <https://home.kpmg/content/dam/kpmg/us/pdf/2016/12/tnf-tax-reform-talkbook-2.pdf>
- KPMG. 2016b. *Understanding the tax reform process: FAQ*. Available at: <https://home.kpmg/content/dam/kpmg/us/pdf/2016/12/tnf-faq-on-tax-reform-final.pdf>
- KPMG. 2017. *Camp tax reform proposal—revisited*. Available at: <https://assets.kpmg/content/dam/kpmg/us/pdf/2017/05/17212.pdf>
- Leone, A. J., J. S. Wu, and J. L. Zimmerman. 2006. Asymmetric sensitivity of CEO cash compensation to stock returns. *Journal of Accounting and Economics* 42 (1-2): 167–192. <https://doi.org/10.1016/j.jacceco.2006.04.001>
- Luna, L., K. Schuchard, and D. Stanley. 2020. *The impact of CEOs on changes to CEO compensation after the TCJA: Initial evidence*. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3451998
- MacKie-Mason, J. 1990. Do taxes affect corporate financing decisions? *Journal of Finance* 45 (5): 1471–1493.
- Murphy, K. J. 2002. Explaining executive compensation: Managerial power versus the perceived cost of stock options. *The University of Chicago Law Review* 69 (3): 847–869. <https://doi.org/10.2307/1600633>
- Murphy, K. J. 2012. The politics of pay: A legislative history of executive compensation. In *Research Handbook on Executive Pay*, edited by R. S. Thomas and J. G. Hill, 11–40. Cheltenham, U.K.: Edward Elgar Publishing.
- Murphy, K. J. 2013. Executive compensation: Where we are, and how we got there. In *Handbook of the Economics of Finance*, edited by G. M. Constantinides, M. Harris, and R. M. Stulz, 211–356. North Holland, The Netherlands: Elsevier Science.
- Murphy, K. J., and M. C. Jensen. 2018. The politics of pay: The unintended consequences of regulating executive compensation. *Journal of Law, Finance, and Accounting* 3 (2): 189–242. <https://doi.org/10.1561/108.00000030>
- Murphy, K. J., and P. Oyer. 2003. *Discretion in executive incentive contracts*. Available at: <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.478.9228&rep=rep1&type=pdf>
- Perry, T., and M. Zenner. 2001. Pay for performance? Government regulation and the structure of compensation contracts. *Journal of Financial Economics* 62 (3): 453–488. [https://doi.org/10.1016/S0304-405X\(01\)00083-6](https://doi.org/10.1016/S0304-405X(01)00083-6)
- Rose, Nancy L., and C. Wolfram. 2002. Regulating executive pay: Using the tax code to influence chief executive officer compensation. *Journal of Labor Economics* 20 (Supplement): S138–S175. <https://doi.org/10.1086/338677>
- Slemrod, J. 1990. The economic impact of the Tax Reform Act of 1986. In *Do Taxes Matter? The Impact of the Tax Reform Act of 1986*, edited by J. Slemrod. Cambridge, MA: MIT Press.
- Slemrod, J. 2018. Tax reform and tax experts. *The Journal of the American Taxation Association* 40 (2): 83–88. <https://doi.org/10.2308/atax-52143>
- Stewart, J. B. 2017. *Tax reform, Reagan style, may be a tougher fit for Trump*. Available at: <https://www.nytimes.com/2017/07/20/business/trump-tax-reform-reagan.html>
- Weinstein, P. J. 2017. *How CEOs could help pay for tax reform*. Available at: <https://thehill.com/blogs/pundits-blog/economy-budget/334562-how-ceos-could-help-pay-for-tax-reform>
- Zagonov, M., and G. Salganik-Shoshan. 2018. CEO pay slice as a measure of CEO dominance. *Research in International Business and Finance* 45: 571–576. <https://doi.org/10.1016/j.ribaf.2017.07.092>

APPENDIX A
Variable Specifications

Variable	Description
Dependent Variables—Calculated from Execucomp	
<i>Salary</i>	Salary (SALARY).
<i>Bonus</i>	Non-equity compensation (NONEQ_INCENT).
<i>Stock</i>	Grant date fair value of stocks awarded (STOCK_AWARDS_FV).
<i>Options</i>	Grant date fair value of option awards (OPTION_AWARDS_FV).
<i>Total Compensation</i>	The sum of salary, bonuses, non-equity compensation, stock, and options.
Δ Salary	The change in salary ($Salary_t - Salary_{t-1}$).
Δ Bonus	The change in non-equity (non-equity _t – non-equity _{t-1}).
Δ Stock	The change in stock ($Stock_t - Stock_{t-1}$).
Δ Options	The change in options ($Options_t - Options_{t-1}$).
Variables of Interest	
<i>Y2017</i>	Indicator variable equal to 1 if the firm-year start date is between January 1, 2017 and December 31, 2017, and 0 otherwise (i.e., not based on Compustat's FYEAR variable).
Control Variables	
<i>Market to Book</i>	Market value of equity (CSHO * PRCC_F) divided by book value of equity (CEQ).
<i>Size</i>	The natural log of total assets (AT).
<i>ROA</i>	Net income (NI) divided by total assets (AT).
<i>NOL</i>	Indicator variable equal to 1 if loss carry forward (TLCF) is positive, 0 otherwise.
<i>Market Return</i>	One year buy and hold return. Calculated using market returns (RET) from CRSP.
<i>Volatility</i>	Five-year standard deviation of market returns (RET) from CRSP.
<i>Revenue Growth</i>	The growth in revenue (SALE) averaged over the prior three years (t , $t-1$, and $t-2$).
<i>Z-Score</i>	Following John, Mehran, and Qian (2010) we use MacKie-Masons (1990) modified Altman Z-Score (Altman 1968). Z-score = $[3.3 * (\text{operating income after depreciation}) + \text{sales} + 1.4 * (\text{retained earnings}) + 1.2 * (\text{current assets} - \text{current liability})] / \text{total assets}$.
<i>CEO Tenure</i>	CEO tenure.
<i>CFO Tenure</i>	CFO tenure.
<i>CEO Payslice</i>	The total compensation of the CEO divided by the total compensation of the second highest paid executive.
<i>CFO Payslice</i>	The total compensation of the CFO divided by the total compensation of the second highest paid executive.
<i>Lag of Ln ΔComp</i>	The natural log of lagged change in compensation (e.g., lagged Δ Options).
<i>Lag of Ln Comp level</i>	The natural log of lagged compensation (e.g., lagged Options).

APPENDIX B

Examples of the Use of Negative Discretion from Proxy Statements

We searched the SEC's EDGAR for proxy statements containing "negative discretion." We found 391 such proxy statements filed between January 1, 2018 and May 31, 2018. We present two excerpts taken from the proxy statements to illustrate the use of negative discretion.

From Merck & Co., Inc.'s 2018 Proxy Statement (page 50)

For 2017, the absolute maximum awards for the CEO and each of the other NEOs under the EIP were \$27.4 and \$22.4 million, respectively. Using a process commonly referred to as negative discretion, the maximum awards are adjusted down to the actual amounts paid to each NEO based on performance against the Company Scorecard, as described in the following section. The EIP award amounts for NEOs are limited to 200% of target, and the maximum award for each NEO is listed in the Grants of Plan-Based Awards table on page 60.

From Heliuss Medical Technologies' 2018 Proxy Statement (page 17)

The Committee may exercise negative discretion by providing in an Other Stock-Based Award the discretion to pay an amount less than otherwise would be provided under the applicable level of attainment of the performance goals or subject the payment of all or part of any Other Stock-Based Award to additional vesting, forfeiture and deferral conditions as it deems appropriate.

Copyright of Journal of Management Accounting Research is the property of American Accounting Association and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.