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

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ABSTRACT

The Tax Cuts and Jobs Act of 2017 (TCJA) makes two major changes that may influence the structure of executive compensation: (1) reducing corporate tax rates from 35% to 21% and (2) eliminating the performance-based exception to the $1 million limit on executive compensation. We posit that firms faced greater incentive to take preemptive actions in 2017 to maximize tax benefits from performance-based compensation before deductibility is eliminated. To test our hypotheses, we compare the 2017 increases in bonus and stock option compensation to the previous two years. We find evidence of a larger increase in 2017 for CEO bonuses and options. Our difference-in-difference results are consistent with the tax rate reduction incentivizing the increase in bonuses and the repeal incentivizing the increase in stock options. We also find that only firms with sufficient preparation time were able to increase stock options in 2017 but preparation time did not constrain bonus increases in 2017. Cross-sectional analyses indicate our results are primarily driven by firms facing stronger tax incentives and that increases in compensation are constrained by corporate governance. Our study contributes to our understanding of tax policy and executive pay by providing evidence of actions taken preemptively rather than after-the-fact.

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I. INTRODUCTION

High levels of CEO pay became a major political issue during the 1992 presidential election, and post-election, President Clinton reiterated his promise to limit the deductibility of compensation to $1 million. "In anticipation of the loss of deductibility, large investment banks accelerated their 1992 bonuses so that they would be paid in 1992 rather than in 1993" and other companies urged employees to exercise option awards before the end of 1992 to ensure deductibility of the compensation expense (Murphy 2012, 23). Ultimately, Section 162(m), in effect, limited only the deductibility of salary to $1 million (the "million-dollar rule") by exempting performance-based compensation. The Tax Cuts and Jobs Act of 2017 (TCJA) eliminates this exception, in addition to reducing the corporate tax rate from 35 percent to 21 percent.[1] Thus, the Act gave rise to behavioral incentives to alter incentive compensation plans and accelerate expenses into 2017 (Joint Committee on Taxation 2020). In this study, we examine firms' efforts to maximize tax benefits from performance-based compensation ahead of the new law.

The TCJA offers a unique setting to study tax policy related to executive compensation because it repeals a major exception to the million-dollar rule. A tax law change that includes an exception, such as Section 162(m), provides little incentive to take preemptive 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,

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[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.

will induce preemptive 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 the relevant period to study the response to the TCJA precedes its effective date.

We expect modifications to executive compensation because the TCJA (1) repeals the performance-based exception and (2) reduces the corporate tax rate from 35 percent to 21 percent. In addition, we posit two mechanisms to maximize deductibility of executive compensation ahead of the new rules: (1) preemptive modifications and (2) negative discretion and *ex post* settling up. First, companies that anticipated the change may have reasonably expected existing contracts would be grandfathered and attempted to modify them before TCJA was signed into law. Second, compensation committees were permitted to exercise negative, but not positive, discretion to determine final payout amounts without losing deductibility. However, this leniency resulted in creatively crafted contracts such that discretionary increases could still be considered an exercise of "negative" discretion. We discuss these mechanisms in greater detail in Section III of the paper.

We examine annual changes in bonus and stock option compensation for years 2015-2017 and predict an atypically large increase in 2017 relative to previous years for CEOs, and to a lesser extent, CFOs. While both the repeal and tax rate reduction provide incentive to pay larger bonuses in 2017, only the repeal of the exception should affect stock option grants. Bonus compensation expense is deductible in the year accrued, even if it is paid early in the following

year.[2] Thus, bonuses related to 2017 but paid in 2018 could be deductible in 2017. In contrast, deductions related to stock option compensation are not immediately deductible; rather, the deductions are taken in future years whenever the options are exercised. Therefore, any increase in stock options is unlikely to be driven by the tax rate incentive.

To test our hypotheses, we use a balanced panel consisting of 1,398 firms with sufficient data from ExecuComp, Compustat, and CRSP. Our univariate results indicate that, on average, the increase in bonuses (stock options) granted to CEOs $123,890 ($127,200) higher in 2017 than in the previous two years. When performing the same tests for nonperformance-based compensation, we do not find that 2017 is statistically different from previous years. Our main results are consistent with our expectation of an atypical increase in bonus and option awards for the CEO, as well as the CFO, in 2017. We find that the 2017 increase in CEO bonus (options) is approximately 59 percent (44 percent) higher compared to previous years.

Next, we use a difference-in-difference research design and designate firms paying CEOs more than $1 million in 2016 as treatment firms. Reduced tax rates provide incentive to accelerate bonuses into 2017 but no incentive to change stock option plans. Further, the million dollar rule has no bearing on the tax rate incentive, i.e., both treatment and control firms would benefit from shifting bonus expenses into the higher tax rate year. Consistent with this argument, we do not find evidence of a differential increase in bonuses between treatment and control groups. Unlike bonuses, stock option would not generate an immediate deduction in 2017. Rather, it is the repeal of the exception to the million-dollar rule that is relevant for options, and therefore, treatment firms have greater incentive to respond. Consistent with this, we find that the increase in stock option awards to CEOs is higher in the treatment group than the control group.

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[2] Bonuses must be paid within 2.5 months after year-end to be deductible.

Even if the change was anticipated, certain fiscal years may not have left enough time to make modifications in 2017. We find that preparation time was irrelevant for bonus increases but did matter for stock options. This result is consistent with the fact that it is possible for bonuses to be determined and paid in 2018 but still be deductible in 2017. Our cross-sectional tests suggest that the increases in 2017 were primarily driven by firms facing larger tax liabilities and constrained by corporate governance. Results for the CFO were generally smaller in magnitude and/or less precise compared to the CEO, which is not surprising because CFO pay is about one-third of CEO pay and has less variation in growth.

Our study adds to our understanding of the relation between tax policy and executive pay by documenting that firms took preemptive actions to maximize and/or maintain full deductibility of performance-based compensation before it is repealed. 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 (2019) finds evidence of higher CEO salary and lower total compensation after TCJA. De Simone, McClure, and Stomberg (2019) tests for a post-TCJA effect on executive compensation but does not find evidence of a change in total compensation or the proportion of salary and performance-based pay between 2017 and 2018. They explain that firms may have been reluctant to make changes in 2018 because of the potential for grandfathering existing contracts and prolonged uncertainty about implementation. Conversely, we use these arguments as our starting point to test for a pre-TCJA effect and find that firms

responded preemptively in the year TCJA was passed, i.e., 2017, and as such our study complements De Simone et al. (2019).

We also contribute to the literature on fiscal foresight by providing empirical evidence that firms changed their behavior as a preemptive response to an impending tax change. Prior research finds that firms anticipated that the repeal of the investment tax credit, a huge loss for many capital-intensive firms, and accelerated investments before the passage of the Tax Reform Act of 1986 (e.g., Auerbach and Hines Jr 1987; Auerbach and Hines 1988). Chrinko and Wilson (2016) finds that anticipation of the job creation tax credits resulted in a decrease in employment that reverses after the law became effective. They conclude that the impact of the new tax policy would be overestimated by ignoring the anticipatory decrease and including its reversal (i.e., increase) in the estimated effect. We identify a new setting whereby an anticipated tax law was compelling enough to elicit a pre-emptive response from taxpayers. Our study highlights the importance of not only studying changes between the pre-post periods, but also studying changes in periods that precede tax law changes.. In addition, our finding of an atypically large increase in stock option compensation in 2017 runs counter to the downward trend of stock option grants since the implementation of SFAS 123R in 2006 (Brown and Lee 2011). Policymakers may want to take into consideration potential anticipatory responses when evaluating a new policy.

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 sampling process and sample statistics, and Section V presents empirical results. Last, Section VI 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 four highest paid executives other than the CFO. 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, material terms are disclosed, and .[3] 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.[4] 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. The tax benefit from stock option awards is not realized until they are exercised. Most option grants vest over 3-5 years and must be exercised within 10 years from grant date (Hall 2000). Thus, unlike annual bonus incentives, stock option grants do not generate an immediate deduction.

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.[5]

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[3] Reg. § 1.162-27(e)(2).

[4] The plan must state the maximum number of shares with respect to which options may be granted during a specified period.

[5] Under the TCJA covered employees include CEO, CFO, and three highest paid executives.

Literature Review

Several studies examine the post-1993 consequences of the $1 million cap on nonperformance-based pay (e.g., salary) yet full deductibility of performance-based pay altered the structure of executive compensation for many firms. 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 million (Harris and Livingstone 2002). Moreover, the differential tax treatment shifted the composition of executive compensation towards performance-based pay and increased total pay; however, Hall and Liebman (2000) suggests that the substitution effect was modest and attributes the increase in total compensation to nontax factors. In contrast, Murphy (2013) argue that Section 162(m) was in large part responsible for the significant increase in options during the 1990s.

Two concurrent papers also examine TCJA and executive compensation. Luna et al. (2019) finds evidence of higher CEO salary and lower total compensation after TCJA whereas De Simone et al. (2019) does not find evidence of a change in total compensation or the mix of salary and performance-based pay between 2017 and 2018. Unlike our study, these two studies test for a response after the TCJA became effective, which is in line with prior research on Section 162(m).

Hypothesis Development

We hypothesize that firms may have modified incentive compensation plans in anticipation of the upcoming tax reform and/or accelerated the 2018 bonus payments into 2017. First, we discuss how firms might have anticipated the upcoming changes. Second, we discuss

the use of discretion and ex post settling up. Next, we discuss potential costs and benefits before presenting our formal hypotheses.

Anticipation

There were a number of reasons to expect tax reform to be on the horizon in 2017, such as its prominence in the 2016 presidential campaign, the Republican-controlled Congress, and the pressure for legislative success. By the time Trump took office, it was clear that tax reform, as promised during his 2016 presidential campaign, was on the legislative agenda. The failed three-month long attempt at repealing the Affordable Care Act (i.e. Obamacare) was considered a major defeat for Trump and Republicans, establishing the need for a redeeming legislative success. Thus, it is reasonable to believe that the Trump administration and Republicans were extremely determined to pass their next major legislative priority – tax reform. As Republicans controlled both the Senate and the House, tax reform could pass as a budget reconciliation bill with a party-line vote as long it did not increase the deficit by more than $1.5 million.[6,7] However, proposed tax plans included far more detail about benefits (i.e. tax cuts) than how they would be paid for (i.e. revenue raisers). The absence of details was deliberate, supposedly to allow for flexibility when congressional tax writing committees craft the legislation ([Mui 2017](#)). Moreover, revenue raisers in any tax reform inevitably results in opposition from the "losers." Even if various personal deductions were eliminated as proposed, the net effect would be to add $2.2 trillion to the deficit over 10 years ([Bryan 2017](#)). In addition, released proposals only hinted at individuals and foreign income as potential sources of revenue. Thus, savvy firms could have

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[6] Instead of 60 votes, a reconciliation bill requires only a majority vote in the Senate.
[7] See the Byrd Rule, which defines any provision that increases the deficit for any year outside of the reconciliation period (usually 10 years) as "extraneous" and therefore not eligible for the reconciliation process. The budget resolution allowed for tax reform as long as the 10-year estimated cost did not exceed $1.5 trillion.

anticipated that additional offsets would have to come from the elimination of corporate tax breaks.

There were also indicators that executive compensation might be targeted. Criticisms about the high levels of CEO pay continued to be in the 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.[8] Closing this loophole was estimated to raise over $50 billion in federal revenues.[9] However, given the Republican-controlled Congress, firms may have looked instead to prior Republican tax proposals to identify potential tax breaks, such as the 2014 Camp plan (KPMG 2017).[10] Further, an article from The Hill explicitly suggested eliminating the exemption for performance-based pay to offset the cost of lowering the corporate tax rate (Weinstein 2017).

It would have been reasonable to assume that pre-existing contracts would be grandfathered. Before the bill was introduced in November, companies would have correctly guessed that the TCJA would include a grandfather rule similar 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. A plan is considered materially modified if it is amended to increase compensation or accelerate or delay payments.[11] Although certain

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[8] https://execcomp.org/News/NewsStories/house-and-senate-democrats-re-introduce-162m-bill-in-preparation-for-tax-reform-debate

[9] https://doggett.house.gov/media-center/press-releases/rep-lloyd-doggett-joins-sens-reed-blumenthal-end-special-tax-exemptions

[10] The Camp plan had targeted executive compensation as to offset other corporate tax cuts. 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.

[11] Reg. § 1.162-27(h).

modifications, such as extending the term of an award, are obviously material ([Bachelder 2018](#)), exactly what would be considered a material modification was not clarified until August 2018.[12]

Negative Discretion and Ex Post Settling up

Ex post settling up occurs when the board adjusts the manager's expected pay as information about ability is revealed. Final payouts that are conditioned upon performance are determined and paid after year-end. Negative discretion and ex post settling up allows for subjectivity, even though performance-based compensation under Section 162(m) was supposed to be objectively determined. Negative discretion was permitted as long as the maximum amount that could be paid was predetermined.[13] In theory, negative discretion allows the compensation committee to pay less than the maximum (i.e., negative discretion) upon attainment of the performance goals without losing deductibility. Among publicly traded sample firms, [Murphy and Oyer (2003)](#) find that 46% (57%) of CEOs (CFOs) have bonus plans with some discretion (based on individual performance assessments) and 28% (32%) of CEOs (CFOs) bonuses were determined by discretion, and CEOs received about one-third of their bonus through discretionary payouts on average. Because negative discretion was permitted, 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](#)). To maximize flexibility, 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 determined final payouts. The inside plan pays less than the maximum and often has little overlap with the

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[12] Initial guidance on implementing the changes to Section 162(m), Notice 2018-68, was issued by the IRS on August, 21, 2018.
[13] Reg. § 1.162-27(e)(2)(iii).

outside plan ([Murphy 2012, 25](#)). Thus, 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](#)).

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 amounts to approximately $3.23 million annually.[14] Dividing this figure by the average pretax book income before special items translates into a 0.45 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 [Dyreng and Lindsey (2009)](#). However, this calculation assumes all compensation is performance-based. For a more conservative estimate, we estimate the tax benefit of only bonus and stock options, the focus of our study, which comes to about $1.51 million in annual tax savings.[15] Thus, the potential tax benefit ranges from $1.51 to $3.23 million per year.

For a cost estimate, we use the increase in performance-based compensation in 2017 relative to the base period (2015-2016) for the top 5 executives this was $404,770 ($315,400 for bonuses, and $89,370 for options). The combined cost of $404,700 is about 0.041% of pretax book income (average pretax book income in 2017 was $986 million). However, Figure 1

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[14] In our sample, the mean total compensation for the top five Named Executive Officers (NEOs) is $17.441 million. We subtract $5 million to account for the deductibility of the first $1 million paid to each executive, resulting in a $12.441 million deduction per year if the contracts are grandfathered for all 5 executives. We use the current rate of 26% (federal tax rate of 21% plus 5% for state) to estimate tax savings.

[15] Bonus and stock option compensation for top five executives sums to $5.81 million for the average firm in our sample. We use the current rate of 26% (federal tax rate of 21% plus 5% for state) to estimate the tax benefit.

suggests that the abnormal increase in 2017 was due to intertemporal shifting of expenses as the change in 2018 is substantially smaller compared to 2017 for bonuses and is negative for options. If expenses are merely shifted into 2017 from 2018, then the cost of paying more 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.

Predictions

First, we predict that CEO bonus payouts in 2017 may have been larger than the amount that would have been awarded if not for TCJA. As previously mentioned, some firms may have modified existing contracts preserve deductibility of the compensation expense. Institutional Shareholder Services (ISS), a proxy advisory firm, reports that many amended bonus plan proposals were placed on the ballot in 2017 to preserve Section 162(m) benefits (ISS 2018). 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). Corporations are allowed to deduct bonus compensation in the year incurred even if paid after year-end as long as it was within 2.5 months.[16] Some companies indeed accelerated award payouts that were originally supposed to be paid in 2018 to the end of 2017 (ISS 2018). The costs of accelerating bonuses into 2018 include the direct cash cost, financial statement expense, and loss of the incentive effect; however, the preceding anecdotal evidence suggests that firms believed the tax benefit outweighed the costs. Therefore, we expect the growth in CEO bonus compensation to be greater in 2017 than in previous years and state our first hypotheses as follows:

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[16] Reg. § 1.404(b)-1T.

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

The compensation committee has considerable discretion in awarding stock option compensation (Balsam and Ryan 2007). Boards tend to view potential dilution as the primary cost of stock option compensation, which can be mitigated by repurchases, and without any direct cash cost, options are perceived as a relatively low cost form of compensation (Murphy 2002). Because stock option compensation is not deductible until the options are exercised, 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. Alternatively, compensation committees could use discretion as to the exact amount of stock options granted, as long as the plan specifies a predetermined maximum.[17] 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.

Given that the Camp plan also called for the limit to apply to CFOs, firms may do the same for CFO compensation. While our predictions for changes in CFO compensation mirror our predictions for CEO compensation increase, there are some noteworthy differences. First, CFOs are generally paid less than CEOs. Murphy and Oyer (2003, 27) reports that half of their sample CFOs are not among the five highest paid executives, and in our sample, on average CFOs are paid about a third of what CEOs are paid. Therefore, the tax savings from CFO compensation deduction will not be as large compared to the benefit from deducting CEO compensation.

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[17] Conf Rept No. 103-213 (PL 103-66) p. 587.

Second, prior to the TCJA, CFO compensation was not subject to the million-dollar rule or the performance-based pay restrictions. As a result, it is unlikely that a negative discretion clause was included in CFO compensation contracts. Therefore, it is an empirical question as to whether the TCJA also induced preemptive 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.

III. RESEARCH DESIGN

Response variables

To investigate the effect of the TCJA on executive performance based compensation we use the change in Bonuses and Options.[18] Each measure is computed as the change from year t – 1 to year t.[19] 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 and not evidence of the impact of the TCJA. Murphy (2013) documents that the level of compensation increases each year, on average, except for recession years.[20] In our sample we also find an increasing trend in executive compensation for bonuses (untabulated), but find a decreasing trend for options (untabulated). Thus, the level of compensation in any single year is likely to be greater than in prior years.

Regression Models

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To investigate changes in executive compensation in anticipation of the new provision, we examine the changes in bonus and stock option compensation over the three-year period preceding the year in which TCJA becomes effective for each firm (2015 through 2017). We use the change, rather than level of compensation, as a way to mitigate concerns that higher levels of compensation in 2017 relative to compensation in prior years is due to a broader trend of increasing compensation and not evidence of the impact of the TCJA.[21] For our main analysis, we use the following model to test our hypotheses:

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

In the models presented, $\Delta Comp$ serves as a placeholder for the natural log of either the $\Delta Bonus$ or $\Delta Options$.[22] Our proxy for the year before TCJA went into effect is $Y2017$. Because TCJA is effective for tax years beginning January 1, 2018 or later, we define $Y2017$ as equal to one if the beginning of the fiscal year is between January 1, 2017 and December 31, 2017, and equal to zero otherwise.[23] A positive coefficient on $Y2017$ would be consistent with our hypotheses.

Difference-in-Difference Models

We also perform supplemental analysis using a difference-in-difference design using the following model:

$$\Delta Comp_{i,t} = \alpha_0 + \alpha_1 Y2017_t + \alpha_2 Treatment_t + \alpha_3 Y2017_i * Treatment_{i,t} + Controls_{i,t} \qquad (2)$$
$$+ \text{Industry FE} + \varepsilon$$

As the Section 162(m) limitation applies to compensation in excess of $1 million, firms with lower compensation levels will be unaffected by the changes to Section 162(m). We

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[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] We use the log transformation because executive compensation is highly skewed.
[23] Observations with partial years have been deleted. This eliminates concerns regarding using 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.

separate these firms into treatment and control groups based on CEO salary in 2016; where salary greater than $1 million classifies a firm a treatment, others are classified as control. This classification assures that the treatment group is subject to the new Section 162(m) restrictions on all performance based compensation. In contrast, it is less clear whether, or to what degree, performance based compensation of control firms is subject to the new Section 162(m) restrictions. Accordingly, we expect a smaller or no reaction for our control group.

A major caveat to this approach is that it is difficult to definitively identify which executives would have been affected by the repeal of the performance-based exception. Stocks are typically deductible when vested, and options typically when exercised; neither are generally deductible in the grant year. This timing difference is one reason that it is unclear to what degree some firms are subject to the new §162(m) restrictions. For example, a CEO granted a $600,000 salary, a $200,000 bonus, $200,000 restricted stock, and $200,000 options package will have total compensation of $1.2 million, but $800,000 is deductible in the current year and $400,000 is deductible at some future point. This CEO's compensation is likely unaffected by the new §162(m) limitations, unless (s)he had restricted stock and options from previous years that were vested/exercised in the current year. We define treatment and control groups in such a way as to assure that the treatment groups are subject to the new §162(m) limitations (unless they qualify for the grandfather exception); but it is less clear to what degree the control firms are subject to the new limitations, if any. Thus our control group is likely to be affected by the §162(m) changes but to a much lower degree, with many firms being completed unaffected.

Control Variables

We include several variables to control for other factors associated with changes in executive compensation, such as investments opportunities (*Market to Book*) and firm

performance (*ROA*, *Market Return*, *Volatility*, *Revenue Growth*, and *Z-Score*). To control for executive power we include *Tenure* and *Payslice* ([Bebchuk, Cremers, and Peyer 2011](#)).[24,25] Additionally, to account for a potential substitution effect, we include *Has Bonus* in the options model and *Has Options* in the bonus model. Because firms with net operating losses will not need the deduction of CEO compensation, we include *NOL*. We also include firm size (*Size*) and prior year's level of bonus or options compensation (*Lag of Comp*) to account for size-related effects. All variables are defined in the Appendix.

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.[26] We obtain financial data from Compustat and market returns from CRSP and limit our sample to domestic firms. 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.[27] These procedures reduce our sample size to 4,194 firms-year observations and 1,398 firms. For the difference-in-difference analysis, we have 383 treatment firms and 1,015 control firms for classifications based on CEO salary and 21 treatment firms and 1,377 control firms for classifications based on CFO salary.

[Insert Table 1 here]

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[24] When our dependent variable is ΔCEO compensation we utilize *CEO Tenure*, and when the dependent variable is ΔCFO compensation we utilize *CFO Tenure*.

[25] 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 5 executives for some firms in all years.

[26] We find similar results using a five-year period.

[27] Our results are similar with and without this restriction; however we believe that the balanced panel is a more appropriate analysis as we are effectively comparing compensation in 2017 to compensation in the previous years.

Descriptive Statistics

Table 2 presents the summary statistics for the variables used in our analysis. We report the untransformed (unlogged) *ΔBonus* and *ΔOptions* for CEO and CFO. We note that the compensation variables are generally skewed. As an example, *ΔBonus* for CEOs has a mean of $49.6 thousand and median of $11.8 thousand.[28] Therefore, we use the natural log of our compensation measure for the regression analysis. Untabulated simple correlations confirm that Y2017 is positively correlated with *ΔBonus*, and *ΔOptions*.

[Insert Table 2 here]

As mentioned in Section IV, we use the change, not level, because the level of executive compensation tends to increase over time, therefore compensation levels higher in 2017 than 2016 and 2015 is likely to have occurred without the tax reform. However, it is less clear as to whether the *change* in compensation follows a similar pattern. To demonstrate, we present the average change in bonus and options by year in Figure 1. Panel A shows that, for CEO bonuses, the increase in 2017 is twice that of previous years and then the increase in 2018 drops to roughly half that of the years preceding 2017. This pattern is consistent with firms accelerating 2018 bonuses into 2017 in order to deduct those bonuses at the higher tax rate. Additionally, the annual change in options is generally negative, except for the substantial increase in 2017, which is then followed by another decline in 2018, consistent with firms increasing options in the year before the TCJA was effective. Panel B presents the average annual change in bonuses and options for the CFO. Again, the change in bonuses is generally positive, and we observe a similar pattern for CFO bonuses, except smaller in magnitude. However, the pattern of changes in CFO options does not bear any similarity to the changes in CEO options, as they remain

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[28] For context, in our sample, the average level of CEO compensation in 2016 was $1.49 million in bonuses, $751 thousand in options. The total of all compensation (salary, bonuses, stock, and options) was $6.32 million.

relatively flat in 2016 through 2018. Overall, Figure 1 offers preliminary evidence in support of

our hypotheses **H1a**, **H1b**, and **H2a**, but not **H2b**.

[Insert Figure 1 here]

V. EMPIRICAL RESULTS

Univariate Results

Table 3 presents the mean values of the compensation variables and tests the difference in

means for two sub-periods, 2017 and 2015-2016.[29] Panel A reports the results for performance-

based compensation (ΔBonus and ΔOptions) and Panel B reports the results for non-performance

based compensation (ΔSalary and ΔStock).[30] Because the compensation variables are highly

skewed, we use both parametric and non-parametric two-sample t-tests, results are similar for

both. The increase in CEO bonuses was $123,890 higher in 2017 compared to 2015-2016 (p-

value = 0.001, 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). These results are consistent

with both **H1a** and **H1b**. We make similar predictions for the CFO; however, we expect results

to be weaker as CFO compensation is generally lower and, as such, less likely to be subject to

the million-dollar limit.[31] As expected, we find similar results for the CFO, except that the

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[29] Firm-year observations with a start date between January 1, 2015 and December 31, 2016 are included in the 2015-2016 sub-period. Observations with a start date between January 1, 2017 and December 31, 2017 are included in the 2017 sub-period.

[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 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 non-performance-based. This assumption biases against us finding significant results.

[31] For example, only 21 out of 1,398 firms in our sample had CFOs with a salary greater than $1 million, whereas that figure jumps to 383 out of 1,398 firms for CEOs.

difference in ΔOptions is only marginally significant (p-value = 0.066, two-tailed). These results

are consistent with **H2a**, and consistent (but weak) for **H2b**.

Panel B presents the same tests for non-performance-based compensation. We find no

statistically significant difference in ΔSalary or ΔStock across the two periods for either the CEO

or CFO. This finding is not surprising given that the changes to §162(m) only affect

performance-based compensation. Overall, these univariate results suggest a response from firms

in the fiscal year prior to the effective date of the TCJA.

[Insert Table 3 here]

Multivariate Results

Table 4, presents the OLS regression results from estimating Equation (1). Our variable

of interest, *Y2017*, 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 *Y2017* is positive

and significant in each specification. The first two columns indicate that, on average, the change

in CEO bonus (options) is approximately 59 percent (44 percent) higher in 2017 relative to the

previous two years, after controlling for alternative explanations.[32] 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 (54 percent increase for options and a 27

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.

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[32] Expected percentage change is (e^{β}-1), or exp. (4665) – 1 = .5944, or approx. 59% higher change in bonuses.

[Insert Table 4 here]

Difference-in-Difference Design

Table 5 presents our difference-in-difference analysis. We classify firms as "treatment" if CEO salary exceeds $1 million.[33] Recall that TCJA gives rise to two incentives to increase performance-based compensation: repeal of the performance-based exception and reduction in tax rates. The two incentives yield different predictions for the treatment-control split. We have argued that the rate reduction is relevant for bonuses but not options because of the timing of the deduction. The tax rate reduction incentive suggests that the interaction term should not be statistically significant. The reason is that all firms would receive the same benefit by accelerating bonuses into 2017 from 2018. This conjecture is supported by the results in Columns (1) and (3).

On the other hand, stock option compensation is not deductible until some future date when the options are exercised. Rather, changes in options should be driven only by the repeal of the exception to the million-dollar rule (not the change in tax rate) and only firms paying more than $1 million are likely to be affected. Accordingly, the 2017 increase in options should be greater for treatment firms than for control firms. As predicted, the coefficient on the difference-in-difference term is positive and significant (p-value = 0.024) for CEO options; however, we do not find a significant result for CFO options. Panel B presents the regression results after replacing industry fixed effects with firm fixed effects in the models. While firm fixed effects mitigates concerns about omitted time-invariant variables, it also results in a substantial reduction in degrees of freedom, especially considering our sample only has 3 years of data. In

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[33] "Treatment" firms based on CEO compensation are used for tests of CEO compensation (Column 1 and 2). For tests of CFO compensation (column 3 and 4) we define "treatment" firms based on CFO salary. Therefore, the "treatment" firms are different depending on whether the test is on CEO or CFO.

addition, we are unable to estimate the coefficient on *Treatment*, which is time-invariant. We

reach similar inferences as in Panel A. The lack of results for CFO options is not surprising given

how flat the change in options is for CFO's in Figure 1. Overall, these results are consistent with

H1a, **H1b**, **H2a**, but not **H2b**.

[Insert Table 5 here]

Tests of Preparation Time

We theorize that some firms anticipated the tax law change. If true, some firms may not

have had sufficient time to modify incentive plans in 2017, which we call preparation time. We

expect that preparation time will vary with fiscal periods. For example, June 30th year-end firm

would have had less time to make adjustments than a calendar year firm as the law passed in

December. We create binary variables, LongPrep and ShortPrep, to proxy the of preparation

time. No cutoff date for long vs short prep time is obvious, so we create 5 different cutoffs based

on the first month (Start Date) of the fiscal period. To illustrate, the February 1st cutoff, in effect,

identifies calendar year firms as long prep and all other firms as short prep.[34] For the March 1st

cutoff, *LongPrep* captures fiscal years that start between January 1, 2017 and February 28, 2017

and *ShortPrep* captures start dates between March 1, 2017 and December 31, 2017. In Table 6,

Panel A, we find that both *LongPrep* and *ShortPrep* are positive and significant in all model

specifications, suggesting that preparation time was not a significant factor in the ability to

increase bonuses in 2017. This is not surprising given that bonuses are deductible even if paid

after year end (as long as they were accrued). In Panel B, we find positive and significant

coefficients on *LongPrep* but not for *ShortPrep*, suggesting that firms with more time to prepare

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[34] In our sample of 1,389 firms the majority (1,048 firms) are calendar year firms.

22

for the tax law change were more likely to have abnormally high increases in stock option grants in 2017.

[Insert Tables 6 here]

Tax Incentives

Next, we examine whether our main findings vary with tax-related incentives. If the 2017 increase in CEO compensation is tax motivated, then our main results may be concentrated among firms based on tax characteristics. Firms paying higher levels of tax may be more concerned about losing tax deductions and are more likely to attempt to maximize deductions. In addition, firms that expect to be more adversely affected by the eventual tax reform face greater incentive to preserve and maximize the deductibility of existing compensation plans in 2017 to shield against other anticipated losses from eliminated tax benefits. Foreign operations was one of the few revenue raisers mentioned in the outline and framework for tax reform. Accordingly, we expect firms with high tax payments and high levels of foreign income to be more likely to attempt to maintain deductibility of executive compensation.

Table 7 presents the results from estimating Equation (1) using subsamples partitioned on GAAP and Cash effective tax rates (ETR), book-tax differences, and foreign income. Panel A and B subsample firms into high/low tax firms based on above/below median ETRs. Panel C subsamples firms based on book tax differences (Khurana and Moser 2013), where high tax firms are firms with low book tax differences. Panel D subsamples based on foreign income.[35] 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

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[35] Foreign income (PIFO) scaled by total assets (AT).

attempting to maximize the deductibility of executive compensation under the old rules. Thus, the larger-than-normal performance-based compensation increase in 2017 appears to be concentrated among tax-motivated firms, suggesting that the compensation changes were at least partially motivated by the tax law change.

[Insert Table 7 here]

Untabulated Supplemental Analyses

Corporate Governance

Next, we test for cross-sectional variation based on corporate governance, given the large body of work on the relationship between governance on both tax aggressiveness and executive compensation. The managerial power hypothesis argues that weak corporate governance leads to excessive executive compensation (Bebchuk, Fried, and Walker 2002). In addition, corporate governance and executive equity incentives affect tax avoidance (Armstrong, Blouin, Jagolinzer, and Larcker 2015). Prior research suggests that weaker governance leads to excessive executive compensation (Core, Holthausen, and Larcker 1999); therefore, we expect stronger governance will constrain compensation increases. We estimate equation (1) after splitting the sample into two groups based on presence of a blockholder, board size, and board independence. Untabulated results suggest that blockholders and board size constrain the abnormal increase in both bonuses and options in 2017. Although board independence is considered "good" governance and is associated with lower tax aggressiveness (Lanis and Richardson 2011), our results indicate that board independence is associated with larger bonus increases in 2017. While inconsistent with Lanis and Richardson (2011), these results are consistent with Armstrong et al. (2015), which documents that board independence is positively associated with low levels of tax avoidance but negatively associated with high levels of tax avoidance. Taken together, the evidence suggests

that the abnormal increase in bonuses in 2017 was considered a low risk tax strategy.

Discourages risky tax but encourages low risk tax strategy

Alternative Time Specifications

As a robustness test we re-estimate Equation (1) using several different time periods: 2014-2017, 2013-2017, and 2013-2018. Because we use a balanced panel, expanding the sample period reduces our sample size.[36] Results are generally consistent with Table 4, except for CFO options.

VI. CONCLUSION

The effect of tax policies on executive pay is a fertile area for executive compensation research. The TCJA achieves what Section 162(m) originally sought to do – limit the deductibility of "unreasonable" executive compensation, defined as compensation in excess of $1 million. We hypothesize that firms deviated from their normal course of granting bonuses and options in 2017 as a last-ditch attempt to maximize compensation deductions under the old rules. In 2017, some firms may have anticipated the evolution and passage of TCJA and preemptively revised their contracts. Alternatively, firms, not yet knowing how the transition rule would apply, may have exercised discretion in existing contracts during the ex post settling up period to maximize deductibility at higher tax rates in 2017. 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).[37]

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[36] At the time of analysis not all the data for 2018 firms was available, accordingly all 2018 firms are calendar year.
[37] Calculation details are provided in the hypothesis development section.

Consistent with our prediction, we find an atypical increase in CEO bonus and option compensation in the year 2017. We also separate firms into two groups based on whether the one-million dollar rule was binding based on 2016 salary levels. This allows us to examine two different incentives provided by TCJA: reduction of tax rate from 35 percent to 21 percent and repeal of the performance-based exception. Our results are consistent with the tax rate reduction providing all firms with an incentive to accelerate bonuses into 2017. In addition, we find that the difference-in-difference estimate is significant for CEO stock options, consistent with a larger response from firms affected by the new restriction. Supplemental analysis reveals that only firms that had sufficient time to adjust their executive compensation packages were able to adjust the option inventive plans for the CEO. In addition, our main results appear to be concentrated among firms facing stronger tax incentives, such as higher tax liabilities and more foreign operations. Our results are robust to several alternative specifications. We also find that the anticipatory response varies with firm-specific tax incentives and corporate governance mechanisms that monitor and constrain abuses in setting executive pay. Therefore, these results are consistent with companies increasing performance-based CEO compensation to lock in their tax deductibility under the pre-TCJA rules.

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).[38] Our evidence also supports the fiscal foresight literature that emphasizes the importance of taking into consideration, not only ex post behavioral responses, but also anticipatory behavioral responses when evaluating the effectiveness of a policy. It is

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[38] Prior literature in management accounting has examined the roles of optimal contracting (Core et al. 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.

worth noting that our findings are in contrast with the decade-long trend in the reduction of stock options granted to top executives ([Brown and Lee 2011](#)). Future research may want to examine the sustainability of this change after the TJCA.

Appendix A: Variable Specifications

Variable	Description
Dependent Variables - calculated from ExecuComp	
Salary	Salary (SALARY)
Bonus	Bonuses (BONUS) plus non-equity compensation (NONEQ_INCENT)
Stock	Grant date fair value of stocks awarded (STOCK_AWARDS_FV)
Options	Grant date fair value of option awards (OPTION_AWARDS_FV)
Total Compensation	The sum of Salary, Bonuses, Stock, and Options.
$\Delta Salary$	The increase in Salary ($Salary_t$ - $Salary_{t-1}$)
$\Delta Bonus$	The increase in Bonus ($Bonus_t$ - $Bonus_{t-1}$)
$\Delta Stock$	The increase in Stock ($Stock_t$ - $Stock_{t-1}$)
$\Delta Options$	The increase in Options ($Options_t$ - $Options_{t-1}$)
Variables of Interest	
Y2017	Indicator variable equal to one if the firm-year start date is between January 1, 2017 and December 31, 2017, and zero otherwise. (i.e. not based on compustat's FYEAR variable)

Appendix A (continued): Variable Specifications

Variable	Description
Control Variables - Firm	
Market to Book	Market value of equity (CSHO*PRCC_F) divided by book value of equity (CEQ).
Size	The natural log of total assets (AT)
ROA	Net Income (NI) divided by total assets (AT)
NOL	Indicator variable equal to one if loss carry forward (TLCF) is positive, 0 otherwise.
Market Return	One year buy and hold return. Calculated using market returns (RET) from CRSP
Volatility	Five-year standard deviation of market returns (RET) from CRSP
Revenue Growth	The growth in revenue (SALE) averaged over the prior 3 years (t, t-1, and t-2)
Z-Score	Following John, Mehran, and Qian (2010) we use MacKie-Masons (1990) modified Altman Z-Score (Altman 1968). Z-score = [3.3 ∗ (operating income after depreciation) + sales + 1.4 ∗ (retained earnings) + 1.2 ∗ (current assets − current liability)] / total assets.
CEO Tenure	CEO Tenure
CFO Tenure	CFO Tenure
CEO Payslice	The total compensation of the CEO divided by the total compensation of the second highest paid executive
CFO Payslice	The total compensation of the CFO divided by the total compensation of the second highest paid executive

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Figure 1: Changes in Compensation

Panel A: Average Δ in Performace Based CEO Compensation

Average Δ in Performance Based Compensation of CEO
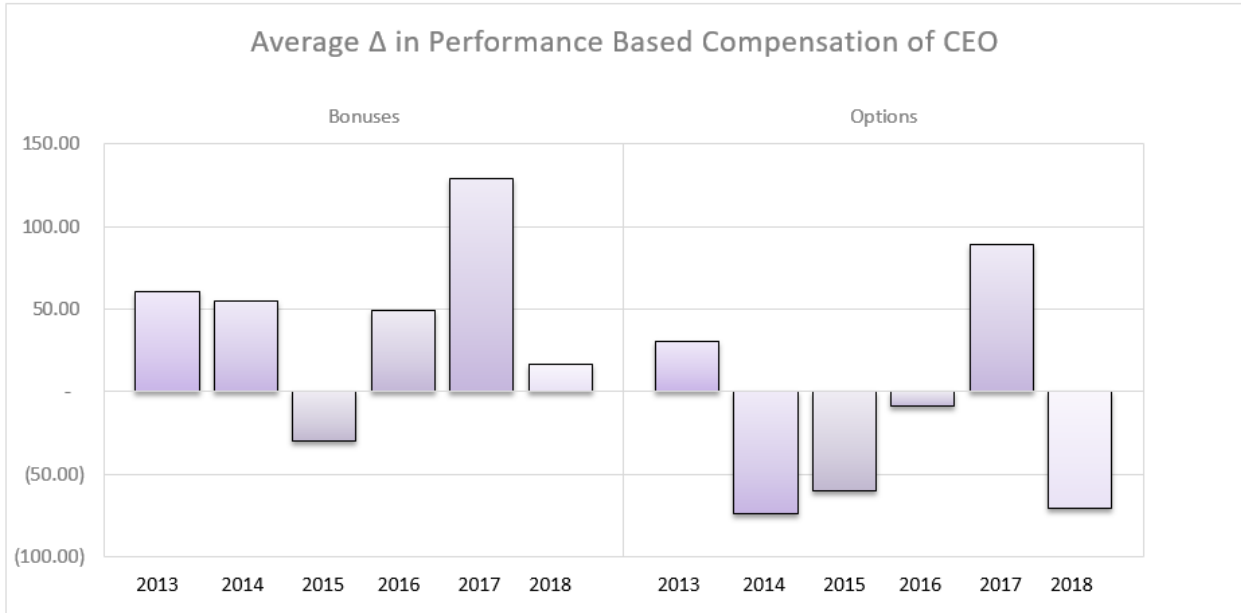
Panel B: Average Δ in Performace Based CFO Compensation

Average Δ in Performance Based Compensation of CFO
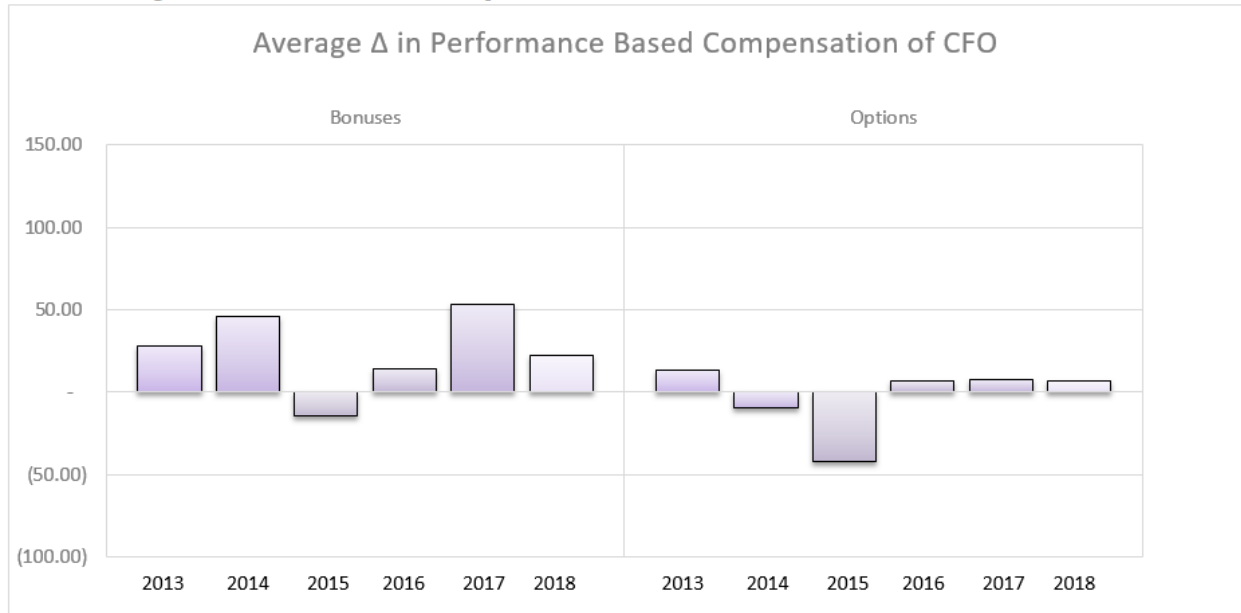
This figure illustrates the trend in the change in CEO and CFO performance based compensation. This figure presents the mean values of the actual dollar amounts (in thousands) of bonuses (including non-equity compensation) and options by year. Panel A presents the change in compensation for CEO, and Panel B presents the same information for the CFO. This table show average data for the full sample. See Table 1 for sample selection procedures.

Table 1: Sample Selection

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 headquartered in the U.S.	(124)		
Less: Firms with missing years	(348)		
Total Reductions			(1,201)
Total Firm-year observations for first set of analysis			**4,194**

	Treatment CEO Salary ≥ $1 Mil	Control CEO Salary < $1 Mil	Total
Number of firms	383	1,015	1,398

This table 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 full panel).

Table 2: Descriptive Statistics

Variable	N	Mean	Std Deviation	25th Percentile	50th Percentile	75th Percentile
Y2017	4,194	33.33%	0.47	0	0	1
CEO Compensation Changes						
ΔBonus	4,194	49.6	1,048.2	(237.5)	11.8	348.0
ΔOptions	4,194	8.2	1,448.7	0	0	0.01
CFO Compensation Changes						
ΔBonus	4,194	17.3	413.7	(92.4)	11.4	134.6
ΔOptions	4,194	(9.7)	400.3	0	0	0
Control Variables - Firm						
Market to Book	4,194	3.294	6.3	1.479	2.345	3.947
Size	4,194	8.259	1.7	7.027	8.204	9.369
ROA	4,194	3.3%	0.1	0.9%	3.7%	7.4%
NOL	4,194	0.61	0.5	0	1	1
Market Return	4,194	0.122	0.3	(0.075)	0.099	0.303
Volatility	4,194	0.087	0.04	0.059	0.077	0.102
Revenue growth	4,194	0.058	0.13	(0.010)	0.040	0.110
Z-Score	4,194	3.543	4.0	1.201	2.706	4.530
CEO Tenure	4,194	8.576	7.6	2.900	6.300	12.000
CEO Payslice	4,194	2.148	1.0	1.413	2.059	2.705
CFO Tenure	4,194	6.035	5.4	2.000	5.000	9.000
CFO Payslice	4,194	0.793	0.3	0.611	0.867	1.000
Bonus Indicator	4,194	0.889	0.3	1	1	1
Option Indicator	4,194	0.372	0.5	0	0	1

This table shows the mean, starndard 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 the appendix

Table 3: Differences in Means Tests

	Y2015 & Y2016	Y2017	Difference	t-test (p-value)	Mann-Whitney test (p-value)
Panel A: _Increase in performance based compensation 2017 compared to 2015 through 2016_					
CEO					
ΔBonus	8.31	132.20	123.89	(0.001)**	(<0.0001)***
ΔOptions	(34.18)	93.02	127.20	(0.011)**	(0.002)**
CFO					
ΔBonus	(0.62)	53.27	53.89	(<0.0001)***	(<0.0001)***
ΔOptions	(18.15)	7.29	25.43	(0.066)*	(0.001)**
N	2,796	1,398			
Panel B: _Increase in non-performance based compensation 2017 compared to 2015 through 2016_					
CEO					
ΔSalary	14.61	10.52	(4.09)	(0.373)	(0.261)
ΔStock	107.80	189.70	81.90	(0.477)	(0.122)
CFO					
ΔSalary	11.09	11.83	0.73	(0.820)	(0.192)
ΔStock	33.90	(7.42)	(41.33)	(0.296)	(0.601)
N	2,796	1,398			

This table reports the results of four different sets of two sample t-tests. Fiscal years beginning on January 1, 2017 and later are classified as 2017; other observations are categorized as either 2015 or 2016. The first p-value is from a student's t-test, the second from the non-parametric Mann-Whitney test. Reported p-values are based on two-tailed t-tests. Variables are defined in the Appendix. *, **, *** Denote significance at the 0.10, 0.05, and 0.01 levels, respectively (two-tailed).

Table 4: Test of the Relation Between Δ in Compensation and Y2017

	ΔCEO Compensation		ΔCFO Compensation	
	Ln ΔBonus	Ln ΔOptions	Ln ΔBonus	Ln ΔOptions
	(1)	(2)	(3)	(4)
Y2017	0.47***	0.36***	0.43***	0.24**
	(0.008)	(0.006)	(0.004)	(0.029)
Market to Book	-0.01	0.02	-0.01	0.01
	(0.448)	(0.156)	(0.291)	(0.264)
Size	0.32***	0.14***	0.40***	0.12***
	(<0.0001)	(0.006)	(<0.0001)	(0.001)
ROA	2.43**	0.46	1.39	-1.11
	(0.013)	(0.554)	(0.101)	(0.116)
NOL	-0.25	0.02	-0.43***	-0.07
	(0.171)	(0.874)	(0.006)	(0.547)
Market Return	4.71***	0.10	3.61***	0.25
	(<0.0001)	(0.623)	(<0.0001)	(0.131)
Volatility	-2.31	-4.60**	1.01	-5.73***
	(0.376)	(0.028)	(0.640)	(<0.0001)
Revenue growth	-0.42	0.80	-0.57	0.51
	(0.472)	(0.140)	(0.223)	(0.204)
Z-Score	-0.05*	0.02	-0.02	0.04**
	(0.051)	(0.422)	(0.248)	(0.027)
Tenure	-0.02*	0.00	0.03**	0.01
	(0.085)	(0.557)	(0.023)	(0.122)
Payslice	-0.04	-0.21***	-1.68***	-0.79***
	(0.608)	(0.003)	(<0.0001)	(<0.0001)
Has Options	0.22		-0.11	
	(0.182)		(0.418)	
Has Bonus		0.55***		0.14
		(0.004)		(0.388)
Lag of Comp.	-0.63***	-0.29***	-0.72***	-0.35***
	(<0.0001)	(<0.0001)	(<0.0001)	(<0.0001)
Intercept	2.75***	0.68	6.27***	2.39***
	(<0.0001)	(0.232)	(<0.0001)	(<0.0001)
Industry FE	Yes	Yes	Yes	Yes
Observations	4,194	4,194	4,194	4,194
Adj. R-squared	15.9%	7.6%	16.4%	9.9%

Notes: *, **, *** 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 (2-digit SIC). All regressions use Model 1. Y2017 is an indicator variable equal to one if the firm-year start date is between January 1, 2017 and December 31, 2017. All other variables are defined in the Appendix.

Table 5: Control Sample: Difference-in-Difference Design

	Pred Sign	Δ in CEO Compensation Ln ΔBonus	Pred Sign	Δ in CEO Compensation Ln ΔOptions	Pred Sign	Δ in CFO Compensation Ln ΔBonus	Pred Sign	Δ in CFO Compensation Ln ΔOptions
		(1)		(2)		(3)		(4)
Panel A - Difference-in-Difference Design (Model 2)								
Y2017	+	0.53***	+	0.20*	+	0.41***	+	0.22**
		(0.004)		(0.080)		(0.003)		(0.020)
Treatment	?	0.79***	?	0.53**	?	-0.25	?	0.17
		(0.002)		(0.012)		(0.785)		(0.783)
*Y2017 * Treatment*	+	-0.19	+	0.62**	+	1.42	+	1.02
		(0.326)		(0.024)		(0.189)		(0.219)
Industry FE		Yes		Yes		Yes		Yes
Observations		4,194		4,194		4,194		4,194
Adj. R-squared		16.1%		8.0%		16.4%		10.0%
Panel B - Fixed Effects								
Y2017	+	0.69***	+	-0.002	+	0.520***	+	-0.042
		(0.001)		(0.495)		(0.001)		(0.350)
*Y2017 * Treatment*	+	-0.20	+	0.53**	+	1.09	+	0.05
		(0.301)		(0.024)		(0.182)		(0.477)
Firm FE		Yes		Yes		Yes		Yes
Observations		4,194		4,194		4,194		4,194
Adj. R-squared		25.3%		33.6%		26.7%		35.7%

Notes: *, **, *** 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 (2-digit SIC). Treatment is an indicator variable equal to one if the salary was greater than one, and zero otherwise. CEO regression have 383 treatment firms, and 1,015 control firms. CFO regression have 21 treatment firms, and 1,377 control firms. All other variables are defined in the Appendix.

Table 6: Tests of the Relation between Compensation and Prep Time

Longprep are firms with Start date before	February 1st	March 1st	April 1st	May 1st	June 1st
	(1)	(2)	(3)	(4)	(5)
Panel A: Ln ΔCEO Bonuses and Long and Short Prep Time					
LongPrep	0.389**	0.420**	0.442**	0.381**	0.344*
	(0.049)	(0.030)	(0.022)	(0.043)	(0.066)
ShortPrep	0.699**	0.645**	0.566*	0.912**	1.155***
	(0.020)	(0.045)	(0.083)	(0.011)	(0.002)
Controls	Yes	Yes	Yes	Yes	Yes
Observations	4,194	4,194	4,194	4,194	4,194
Adj. R-squared	15.9%	15.9%	15.9%	15.9%	16.0%
Panel B: Ln ΔCEO Options and Long and Short Prep Time					
LongPrep	0.458***	0.413***	0.406***	0.375***	0.370***
	(<0.0001)	(0.001)	(0.001)	(0.003)	(0.003)
ShortPrep	-0.144	-0.101	-0.098	-0.045	-0.044
	(0.489)	(0.645)	(0.664)	(0.861)	(0.869)
Controls	Yes	Yes	Yes	Yes	Yes
Observations	4,194	4,194	4,194	4,194	4,194
R-squared	4.0%	4.0%	4.0%	3.9%	3.9%
Count of LongPrep	1,048	1,110	1,124	1,172	1,186
Count of ShortPrep	350	288	274	226	212

Notes: *, **, *** 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 (2-digit SIC). In each column LongPrep and ShortPrep are defined based on a seperate cutoff date. All other variables are defined in the Appendix

Table 7: Tax Incentives

	Ln CEO ΔBonus		Ln CEO ΔOptions		Ln CFO ΔBonus		Ln CFO ΔOptions	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Low Taxes	High Taxes	Low Taxes	High Taxes	Low Taxes	High Taxes	Low Taxes	High Taxes
Panel A - High/Low Taxes: GAAP ETR								
Y2017	0.09	0.77***	0.23	0.48***	0.28	0.55***	0.14	0.35**
	(0.731)	(0.002)	(0.243)	(0.009)	(0.208)	(0.007)	(0.384)	(0.023)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs	2,097	2,097	2,097	2,097	2,097	2,097	2,097	2,097
Adj. R	16.1%	20.0%	10.0%	8.6%	17.0%	19.3%	11.7%	10.9%
Panel B - High/Low Taxes: Cash ETR								
Y2017	0.12	0.73***	0.22	0.53***	0.30	0.53**	0.21	0.27*
	(0.632)	(0.003)	(0.223)	(0.006)	(0.158)	(0.013)	(0.158)	(0.091)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs	2,097	2,097	2,097	2,097	2,097	2,097	2,097	2,097
Adj. R	16.4%	18.6%	11.2%	8.2%	18.1%	17.6%	14.6%	8.6%
Panel C - High/Low Taxes: Book Tax Differences								
Y2017	0.02	0.78***	0.10	0.57***	0.04	0.71***	0.14	0.28*
	(0.952)	(0.002)	(0.605)	(0.002)	(0.870)	(<0.0001)	(0.377)	(0.067)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs	2,097	2,097	2,097	2,097	2,097	2,097	2,097	2,097
Adj. R	18.1%	17.0%	7.6%	9.8%	18.4%	17.4%	10.2%	13.1%
Panel D - High/Low Foreign Income								
	Low	High	Low	High	Low	High	Low	High
Y2017	0.30	0.55**	0.23	0.43**	0.35*	0.43*	0.14	0.28*
	(0.202)	(0.035)	(0.162)	(0.040)	(0.081)	(0.053)	(0.346)	(0.091)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs	2,124	2,070	2,124	2,070	2,124	2,070	2,124	2,070
Adj. R	15.0%	19.9%	10.3%	8.4%	16.3%	18.9%	12.4%	10.8%

Notes: *, **, *** 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 (2-digit SIC). Variables are defined in the Appendix.