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Does Tax Matter? Evidence on Executive Compensation After 162(m)'s Repeal

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Does Tax Matter? Evidence on Executive Compensation After 162(m)'s Repeal

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Abstract

As part of the most sweeping federal tax reform in a generation, the Tax Cuts and Jobs Act ("TCJA") radically altered the tax treatment of compensation paid to senior executives of public companies. Prior to the TCJA, payment of such compensation in excess of one million dollars was non-deductible except to the extent the compensation was performance-based. The TCJA eliminated the exception so that all senior executive compensation above one million dollars is now non-deductible regardless of whether it is performance-based or not.

This reform provides a natural experiment to study the role of tax law in influencing managerial pay decisions, an issue that has been debated for decades by scholars and policymakers. Did the elimination of the performance-based pay exception influence senior executive compensation decisions?

Using a novel empirical design, we find no evidence that the repeal of the performance-based pay exception changed the most significant and salient compensation features, namely the proportion of performance-based pay to total pay and the overall amount of pay. On the other hand, when we move from headline compensation features to smaller, technical ones, our data suggests that the tax change has had a significant influence. This suggests that tax rules may be consequential in shaping executive compensation practices only when no one (other than tax advisors) is paying attention.

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Introduction

In December 2017, Netflix announced that it would radically change the way it compensated its top executives. Chief Content Officer Ted Sarandos, for example, saw his salary increase from \$1 million to \$12 million.¹ That additional \$11 million in salary replaced what had been a similar cash bonus opportunity under a “Performance Bonus Plan” tracking Netflix’s performance.² In its public filing, Netflix explained the shift from bonuses to salaries as a response to tax law changes under the Tax Cuts and Jobs Act (“TCJA”) enacted earlier that month.³ In a move that had come as a surprise to most, the TCJA had removed the tax advantage for paying senior executives compensation that was “performance-based.”⁴ Netflix claimed to be responding to this tax law change by making its pay less performance-based, suggesting that its prior choices regarding pay design were heavily influenced by tax considerations.

In this Article, we examine whether Netflix is an outlier in its responsiveness to tax law or whether it is merely the tip of the iceberg. Using a novel empirical approach to assessing firms’ responses to the TCJA, we find evidence suggesting that firms have not changed the broad strokes of compensation design. At the margins, however, rather than making the headlines (a la Netflix), firms and CEOs appear to have taken subtle, technical steps to adjust compensation patterns in response to the tax change. Taken together, these results imply that tax does not affect the core deal between managers and boards – how much the executive is paid, what are her incentives – but that firms will grab tax advantages that do not implicate these central concerns.

We thus contribute to a long-running debate about the causes of and potential fixes for American inequality. Though there are now high-profile debates about how much more unequal U.S. wealth has become, everyone agrees that America’s wealthiest claim a larger share of national wealth than ever before. A substantial fraction (more than 40%, by one estimate) of this group are top executives of large public companies, such as Mr. Sarandos.⁵ Pay for these executives has skyrocketed over the last

1. Netflix, Current Report (Form 8-K) (Dec. 26, 2017), <https://perma.cc/E2SL-Y3QU>; see also Michael Hiltzik, *Netflix raises executive salaries, proving that ‘performance-based’ pay always was a sham*, L.A. TIMES (Dec. 27, 2019, 10:30 AM), <https://perma.cc/NKS6-RAGK>. Other than Sarandos, Netflix also raised the salaries of CFO David Wells (\$2 to \$2.8 million) and Chief Product Officer Greg Peters (\$1 to \$6 million). See *id.* CEO Reed Hastings’s salary was not increased.

2. See Netflix, Form 8-K, *supra* note 1, at 1 n.1.

3. *Id.* (“Salary for each Named Executive Officer . . . that was over \$1 million had a substantial surcharge to the Company under IRS rule 162(m). Thus, the Company created, and the shareholders approved, the Performance Bonus Plan (the ‘Plan’) for those whose salary the Company wanted to cap at \$1 million to avoid the surcharges. With the recent passage of federal tax reform, the Plan will no longer eliminate such surcharge. As such, the Committee has determined that all cash compensation for 2018 will be paid as salary.”).

4. See *infra* Part II.

5. Jon Bakija, Adam Cole & Bradley T. Heim, *Jobs and Income Growth of Top Earners and the Causes of Changing Income Inequality: Evidence from U.S. Tax Return Data 34* (Apr. 2012) (unpublished manuscript) (<https://perma.cc/E2YT-MTDP>). In July 2020, Sarandos was named co-CEO of Netflix, see Press Release, Netflix, Ted Sarandos Appointed Co-

30 years. For instance, in 1989 the average CEO earned fifty-eight times as much as her average employee; today, that figure is about two hundred and seventy-eight to one.⁶

Some commentators tie this dramatic growth to self-serving exercises of “managerial power.”⁷ In this view, over time executives have become more skilled at shaping and influencing the shareholder-elected boards of directors that set the executives’ pay. With the help of compensation consultants, executives negotiate compensation packages of such complexity and opacity that few observers can even know how much the executive is paid, let alone whether she earned it.

Others argue that complex and staggeringly large pay is not a failure of board and shareholder oversight, but instead a vindication of it.⁸ Managers are increasingly consequential and have more general, transferrable expertise as opposed to the firm-specific kind.⁹ Moreover, they have to be encouraged to take on the kinds of risk that their diversified shareholders prefer, while balancing these against the preferences of firm creditors and other business partners. Striking that balance requires complex pay instruments that leave managers poorer when their firm fails. And managers, like other humans, dislike risk, so pay that forces them to bear this risk must include a premium to offset it.¹⁰

Failures of tax policy have offered a third popular explanation, possibly to the exclusion of the others. Congress has often used tax incentives to promote certain compensation arrangements and penalize others.¹¹ While it is good academic sport to criticize federal intervention in executive pay generally,¹² intervention-via-tax has come in for particularly withering attacks.¹³ For instance, efforts to use the tax system to control compensation have been so riddled with loopholes that they have been largely

CEO of Netflix (July 16, 2020), <https://perma.cc/3TF9-VXGR>, a move that will presumably raise his pay to even greater heights.

6. LAWRENCE MISHEL & JULIA WOLFE, ECON. POLICY INSTITUTE, CEO COMPENSATION HAS GROWN 940% SINCE 1978; TYPICAL WORKER COMPENSATION HAS GROWN ONLY 12% DURING THAT TIME 8, 14, 16 (2019), <https://perma.cc/2DH9-5T84>.
7. See, e.g., LUCIAN BEBCHUK & JESSE FRIED, PAY WITHOUT PERFORMANCE: THE UNFULFILLED PROMISE OF EXECUTIVE COMPENSATION 61–79 (2004).
8. Kevin J. Murphy & Jan Zabojsnik, Managerial Capital and the Market for CEOs 30–31 (Apr. 2007) (unpublished manuscript) (<https://perma.cc/9QDA-VP52>).
9. *Id.* at 4.
10. Unlike shareholders, managers are unable to diversify to protect against their company’s firm-specific risk because they necessarily have an extremely large human capital investment in the company and because of contractual restrictions against hedging their financial investment in the company.
11. See, e.g., I.R.C. § 162(m)(4)(C) (2006) (performance-based exception to cap on deductions for compensation); I.R.C. § 280G(b)(2)(c)(ii) (2006) (limitation on deductibility for change-in-control payments); I.R.C. § 4999 (1984) (excise tax on executive’s receipt of certain change-in-control payments); I.R.C. § 409A (2010) (tax penalties for certain distributions of deferred compensation).
12. See, e.g., BEBCHUK & FRIED, *supra* note 7, at 72–73.
13. See Gregg D. Polsky, *Controlling Executive Compensation Through the Tax Code*, 64 WASH. & LEE L. REV. 877, 884 (2007); see generally Andrew C.W. Lund, *Tax’s Triviality as a Pay-Reforming Device*, 57 VILL. L. REV. 571 (2012); Michael Doran, *Uncapping Executive Pay*, 90 S. CAL. L. REV. 815 (2017).

ineffective.¹⁴

But the criticism of the now-repealed preference for performance-based compensation had gone much further.¹⁵ Leading executive compensation experts on both sides of the debate have argued that it may well have been the now-repealed preference for performance-based pay, rather than managerial power or efficient contracting, that drove compensation growth over the past twenty-five years.¹⁶ This provision, section 162(m), was first adopted in 1993. Until 2018, it denied businesses a deduction for annual compensation paid to top executives in excess of one million dollars per executive, unless that pay was performance-based. Once the one-million-dollar threshold was reached, companies were therefore encouraged to pay compensation in the form of performance shares, stock options, and bonuses. These forms of compensation were in turn associated with higher overall compensation levels than pure salary. Option grants, for example, took a sharp turn upwards after 162(m)'s adoption, naturally raising the question of whether 162(m) was the culprit.

Although there has been a lot of debate, and a fair bit of evidence,¹⁷ any claim of 162(m)'s effects has been largely speculative. The rise in executive pay was certainly associated with the passage of 162(m), but the problem is separating causation from correlation. Maybe 162(m) just happened to arrive at the beginning of a booming trend in executive compensation? This trend may have been driven by the rise of more powerful institutional shareholders who demanded more performance-based compensation so as to align executives' interests with their own.¹⁸ Alternatively, performance-based pay may have exploded because its complex nature uniquely enabled executives

14. See Doran, *supra* note 13, at 821–35.

15. Additionally, managerial power theorists sometimes point to particularly complicated pay structures with no obvious efficiency rationale as evidence that managers are deliberately making their pay hard for others to understand. But if taxes can explain some of these complex wrinkles, that would undermine some of the evidence of managerial power.

16. See, e.g., Kevin J. Murphy, *Executive Compensation: Where We Are and How We Got There*, in 2 HANDBOOK OF THE ECONOMICS OF FINANCE 288 (George M. Constantinides et al. eds., 2002) [hereinafter Murphy, *Where We Are*] (“Ironically, although the objective of the new IRS Section 162(m) was to reduce excessive CEO pay levels by limiting deductibility, the ultimate result . . . was a significant increase in CEO pay.”); Kevin J. Murphy, *The Politics of Pay: A Legislative History of Executive Compensation*, in RESEARCH HANDBOOK ON EXECUTIVE PAY 35 (John S. Beasley ed., 2011) [hereinafter Murphy, *Politics*] (“The legislative history supports a third, non-mutually exclusive [to managerial power and efficient contracting] hypothesis: the explosion in stock options that led to the escalation in pay was in large part the (arguably unintended) consequence of government policy [including 162(m)].”); Kevin J. Murphy & Michael Jensen, *The Politics of Pay: The Unintended Consequences of Regulating Executive Compensation*, 3 J.L. FIN. & ACCT. 189, 195 (2018) (“While not the only factor driving the level and composition of CEO pay, Section 162(m) has been a leading cause of the evolution of pay since the early 1990s.”); Rick Wartzman, *This Little-Noticed Section Of Trump’s Tax Plan Could Make Corporate America More Responsible*, FAST COMPANY (Feb. 20, 2018), <https://perma.cc/7YA3-9U7Y> (“It was 162(m) that . . . led to an explosion in executive pay,” [late Professor Lynn] Stout says.”).

17. See *infra* notes 44–47 and accompanying text.

18. See, e.g., Murphy, *Where We Are*, *supra* note 16, at 74.

to obtain unjustifiably high compensation.¹⁹

And then, all at once and with no apparent warning, the 162(m) performance-based exception was suddenly gone at the end of 2017. Although the tax preference's elimination does not allow us to determine with certainty what effect 162(m) had on executive pay in 1993, it does provide insight into 162(m)'s—and tax law's—consequentiality almost 25 years later. If 162(m)'s preference for performance-based compensation was pushing firms to use that sort of pay, then we would expect its repeal to cause firms to drift back to using lower amounts of performance-based compensation, as Netflix did. Correspondingly, if high levels of performance pay required firms to pay their executives more because of the associated risk premium, we would expect to see lower amounts of compensation overall as the risk premium diminished. On the other hand, if 162(m)'s preference was less influential, we would expect to see little or no change in the kinds, and overall amount, of compensation paid to executives after it was eliminated.²⁰

While the empirical analysis of this issue might appear straightforward, several details make it challenging.²¹ The law changed less than three years ago so our data is limited. Relatedly, executive compensation is liable to be sticky—subject to formal and informal agreements and understandings that may be difficult for firms to revise immediately. For example, a CEO hired before the tax law change in 2017 may have a five-year employment contract establishing salary, bonus, and equity compensation levels, and mutually amending this contract midstream may prove unattractive. As a result, analysis of the effects of the new tax law in the 2018-2020 period may systematically undervalue the effects of the tax change over the longer term. To overcome this problem, we offer a novel empirical approach that focuses precisely on the sort of compensation arrangements least susceptible to stickiness—new CEO employment contracts. We compare new CEO contracts entered into during the period prior to the TCJA and those entered into during the two-year period following it.

Using this approach we find no evidence that new CEO hires in the post-TCJA period were paid with a different proportion of performance-based and non-performance-based pay as compared to their colleagues hired prior to the TCJA. Likewise, we see no significant evidence that the total amount of CEO compensation has changed after the TCJA.

These findings undermine the argument that 162(m) was driving compensation growth or structure. Of course, we cannot say for sure what may have been happening

19. See BEBCHUK & FRIED, *supra* note 7, at 53–60; Lucian Arye Bebchuk, Jesse M. Fried, & David I. Walker, *Managerial Power and Rent Extraction in the Design of Executive Compensation*, 69 U. CHI. L. REV. 751, 789 (2002).

20. See Subpart III.E. below for a specific instance of small-bore compensation choices of this sort.

21. Two groups in accounting and finance have done work on the matter to this point. See LeAnn Luna, Kathleen Schuchard, & Danielle Stanley, *Changes in CEO Compensation After the Tax Cuts & Jobs Act and the Impact of Corporate Governance: Initial Evidence* (June 30, 2020) (unpublished manuscript) (<https://perma.cc/R99F-NMWL>); Lisa De Simone, Charles McClure, & Bridget Stomberg, *Examining the Immediate Effects of Recent Tax Law Changes on the Structure of Executive Compensation* (Kelley Sch. of Bus. Rsch. Paper, Paper No. 19-28, 2020), <https://perma.cc/F656-8BDK>.

in 1993. However, our data certainly do cast doubt on 162(m)'s role in recent compensation patterns, and we are unaware of any reason to believe the significance of tax considerations in this context has changed much between then and now. More broadly, our results suggest that the tax code is not the best vehicle for influencing firms' core compensation practices.

Our story is a bit more nuanced, though, when we focus in on one particular detail of compensation design. Before the TCJA, compensation earned by an executive in one year but not actually paid to her until retirement was always deductible by the company in the later year. Thus, for executives earning more than \$1 million of salary, deferring portions of the salary until after retirement was an end-run around the 162(m) cap. Congress tried to close this loophole in the TCJA by applying the deductibility cap even to departed executives.

We find that firms indeed exploited the deferred compensation loophole, and that TCJA didn't fully succeed in closing it. Specifically, we find that before the TCJA, use of deferred compensation is strongly correlated with executives who likely earn more than \$1 million in salary, as one would expect. After TCJA, that correlation vanishes, but another appears in a different context. In sum, our evidence implies that 162(m) did have some effect on certain technical details of executive compensation practices. These details, however, did not affect total pay, and had little impact on the CEO's risk, incentives, or other key aspects of the deal. So we think on the whole these results are consistent with the intuition that, in the executive compensation context, taxes play a relatively insignificant role in major design issues, even though they are taken into account at the technical level when other influences on pay design are less significant.

The Article proceeds as follows. In Part I, we describe the history and mechanics of 162(m) from its enactment in 1993 until its major reform in the TCJA. The passage of 162(m) came in response to an explosion in executive pay levels, an explosion which continued and even accelerated following adoption. We summarize the extensive work documenting this rise as well as the resulting debate among academics and practitioners over what at least some considered to be a failure in the managerial labor market at public companies.

Part II describes the TCJA reforms to 162(m). It also discusses the contemporaneous work on the effects of the reforms by two teams of researchers, who reach tentative but differing conclusions on the matter.

Part III empirically analyzes post-TCJA executive compensation design in an effort to determine the impact, if any, of the 162(m) reforms. We use the novel approach described above and find that the changes to 162(m) were not important to big ticket compensation practices. However, we find a substantial small-bore effect on deferred compensation arrangements, suggesting firms were responsive to the 162(m) changes with respect to the technical structuring of pay.

I. The Rise of 162(m) and Its Place in the Executive Compensation Debates

A. 162(m)'s Adoption and Mechanics

Executive pay became a political issue in the early 1990s after rising for the prior

decade.²² Then-Presidential candidate Bill Clinton's attacks on pay practices combined revulsion at the overall level of pay²³ as well as pay's insensitivity to company performance.²⁴ In the middle of the 1992 presidential campaign, he proposed to eliminate tax deductions for all pay to an employee that exceeded a \$1 million annual cap.²⁵ After his election, his team modified that position in its bid for what would become the Omnibus Budget Reconciliation Act of 1993. Under new section 162(m), instead of a blanket disallowance of deductions for pay in excess of \$1 million, firms could deduct such excess pay only if it was performance-based.²⁶

The performance-based pay exception corresponded to a significant finance literature from the 1980s and early 1990s arguing that contingent pay should be used to align incentives and mitigate agency costs.²⁷ Famously, Michael Jensen and Kevin Murphy argued that paying CEOs like bureaucrats – mostly through performance-insensitive salary and perquisites – caused them to behave like bureaucrats and run companies in risk-averse and effort-averse ways.²⁸ Increasing performance sensitivity in CEO pay would lead to better outcomes for shareholders, the theory predicted. In fact, by the enactment of section 162(m) in 1993, the shift towards greater performance-based pay was already well underway, as institutional shareholders had been pressing firms to adopt what were viewed to be more shareholder-friendly pay practices.

Section 162(m) ratified this view. It capped the compensation deduction available to public firms for amounts paid to each of the “top five” executives – the CEO and the remaining four highest-paid officers – in excess of \$1 million annually.²⁹ Effectively

22. See, e.g., Andrew R. Brownstein & Morris J. Panner, *Who Should Set CEO Pay? The Press? Congress? Shareholders?*, HARV. BUS. REV. 28, May–June 1992, at 28 (noting that not since the 1930s had compensation earned the attention of as many public officials as it did in the early 1990s); Louis M. Thompson, Jr., *The SEC Targets Executive Pay*, 15 DIRECTORS & BOARDS, Summer 1991, at 48 (editorializing that it “did not take a whiz kid” to realize that Congress would get involved with such an “emotionally charged issue” as excessive compensation in a time of recession); Kevin J. Murphy, *Politics, Economics, and Executive Compensation*, 63 U. CIN. L. REV. 740 (1995) (“Section 162(m) . . . was a response to the populist desire to penalize highly paid executives.”).

23. See Murphy, *Politics, Economics, and Executive Compensations*, *supra* note 22, at 738.

24. See *id.*

25. See Sarah Anderson, *The Failure of Bill Clinton's CEO Pay Reform*, POLITICO (Aug. 31, 2016, 7:35 PM EDT), <https://perma.cc/QK3A-BJV7>.

26. *Id.*

27. See, e.g., Michael C. Jensen & Kevin J. Murphy, *CEO Incentives – It's Not How Much You Pay, But How*, HARV. BUS. REV., May–June 1990, at 138. For more on the history of the pay-for-performance movement, see Andrew C.W. Lund & Gregg D. Polsky, *The Diminishing Returns of Incentive Pay in Executive Compensation Contracts*, 87 NOTRE DAME L. REV. 677 (2011).

28. See Jensen & Murphy, *CEO Incentives – It's Not How Much You Pay, But How*, *supra* note 27, at 138.

29. Top five executives included the CEO and the four next most highly-compensated officers. See Treas. Reg. § 1.162-27(c)(2) (2012). The definition of “officer” was determined in accordance with the rules for executive compensation disclosure under Regulation S-K. *Id.* In 2007, in response to changes in disclosure rules, the IRS changed the definition by excluding CFOs from the group, thus, limiting the term to cover the CEO and four highest-paid, non-CFO officers. I.R.S. Notice 2007-49, 2007-1 C.B. 1429.

this imposed a 35 percent surcharge, relative to the prior tax regime, to tax-paying firms on amounts paid to executives over \$1 million. However, firms could still claim deductions for compensation above \$1 million to the extent it constituted “qualified performance-based compensation.”³⁰ Qualified performance-based compensation was defined as compensation that was (i) based on objective performance goals, (ii) approved by an independent compensation committee of the board, and (iii) approved by shareholders.³¹

Public companies facing corporate tax liability and with executives earning above \$1 million thus had a tax incentive to shift some pay to contingent forms. In the light of the prevailing executive compensation practices at the time of enactment, this would mean a shift to performance cash bonuses or stock options. The latter, if (as was typical) granted at-the-money, were considered performance-based because their value increased or decreased based on firm performance as measured by stock price.³² Time-vested restricted stock, on the other hand, was not considered performance-based because the executive would receive a benefit so long as she remained employed for the requisite length of time and the stock did not become worthless. 162(m) privileged stock options even further because option plans could be “qualified,” i.e., approved by shareholders, without the approved plans specifying anything other than the broadest possible limitations—the total number of shares available under the plan and maximum numbers of shares for particular employees. The actual number of options to be granted to an executive could be left to the board’s subsequent discretion, preserving maximum flexibility. Performance bonuses, on the other hand, were required to be based on pre-established, objective performance goals, whose satisfaction was required to be certified by independent directors.³³ Subjective or qualitative performance goals could not be used to qualify the pay for deductibility. While boards could retain subjective discretion to depart downwards from formulaic bonus awards, they could not retain discretion to make upwards adjustments without sacrificing deductions.³⁴

B. Compensation Post-162(m) and the Great Debate

Executive pay did not decline following 162(m)’s adoption.³⁴ In fact, it continued its upward trajectory, roughly tripling over the next eight years—from a median of \$2.9 million per year among S&P 500 CEOs in 1993 to \$9.3 million (in constant, inflation-adjusted terms) among the same group in 2001—before slowing during the first

30. I.R.C. §162(m)(4)(C) (2006).

31. *Id.*

32. See Polsky, *supra* note 13, at 677.

33. See *id.*

34. See, e.g., Murphy, *Politics*, *supra* note 16 (“The emerging conclusion is that attempts to regulate CEO pay [including tax interventions] have been mostly unblemished by success.”); Joy Sabino Mullane, *Incidence and Accidents: Regulation of Executive Compensation Through the Tax Code*, 13 LEWIS & CLARK L. REV. 485, 519–26 (2009); Polsky, *supra* note 13, at 884 n.36; Ryan Miske, Note, *Can’t Cap Corporate Greed: Unintended Consequences of Trying to Control Executive Compensation Through the Tax Code*, 88 MINN. L. REV. 1673, 1674–75 (2004).

decade of this century.³⁵ Among a slighter smaller group of firms, average compensation now is estimated at about \$17 million, with an annual growth rate around 5%.³⁶ That increase in the 1990s largely corresponded with rising grants of performance-based compensation. During the initial post-adoption period (through 2010), stock options made up for the lion's share of this contingent pay, while time-vested restricted stock and performance shares—restricted stock that vests upon meeting performance goals—reached parity and eventually surpassed stock options during the post-2010 period.³⁷

As it became apparent that 162(m) had not constrained pay as intended, the provision came in for substantial criticism. Some contended that an effective 35% surcharge on “bad” compensation may not have been strong enough medicine to reshape pay practices.³⁸ In addition, the performance-based pay exception was riddled with loopholes and workarounds. For example, qualification of bonus pay or performance shares as “performance-based” merely required targets to be set out in advance; therefore, a company could use unambitious targets to deduct amounts that were, in substance, salary.³⁹ Likewise, at-the-money options granted in a rising stock market offered highly likely compensation regardless of performance.⁴⁰

Separate and apart from the performance-based pay exception, 162(m) permitted deductibility of *all* pay to people who were no longer covered executive officers. Firms could thus gain back deductibility for pay over \$1 million if they used deferred compensation arrangements to delay payment until after the executive retired. Potentially, then, 162(m) might explain some of the prevalence of very large executive retirement payouts. Managerial power scholars had suggested that there was little efficiency-based justification for these plans, and that they were used mostly because they were hard for shareholders to track, but other commentators have managed to posit potential pro-shareholder explanations.⁴¹

35. See Murphy, *Where We Are*, *supra* note 16, at 227.

36. MISHEL & WOLFE, *supra* note 6, at 7.

37. See Jensen & Murphy, *supra* note 16, at 8; see also David I. Walker, *Reconsidering Realization-Based Accounting for Equity Compensation*, 13 N.Y.U. J.L. & BUS. 535 (2016).

38. The weakness of a deduction loss was usually framed in opposition to the social and economic forces thought to pressure boards into overpaying CEOs. The full account of this “managerial power” view is attributed to Bebchuk and Fried. See BEBCHUK & FRIED, *supra* note 7, at 49–51.

39. See, e.g., Mullane, *supra* note 34, at 523–25 (“As an initial matter, satisfying the performance-based requirements is not challenging. Treasury regulations provide that a performance goal does not need to be ‘based upon an increase or positive result under a business criterion and could include, for example, maintaining the status quo or limiting economic losses.’ Furthermore, once the threshold requirements have been met, there is no limit to the amount of performance-based compensation that can be deducted.” (footnote omitted)).

40. See, e.g., BEBCHUK & FRIED, *supra* note 7, at 272 (criticizing the lack of out-of-the-money option grants).

41. Cf. Polsky, *supra* note 13, at 905–07 (explaining this skeptical view of executive retirement plans); Kelli Alces & Brian Galle, *The False Promise of Risk-Reducing Incentive Pay: Evidence from Executive Pensions and Deferred Compensation*, 38 J. CORP. L. 53, 65–81 (2012) (offering a set of reasons to potentially be skeptical of any pro-efficiency defense of deferred

Some critics made even stronger claims, suggesting that 162(m) *actually pushed executive pay higher* for a handful of reasons.⁴² First, the legislative imprimatur of \$1 million's "reasonableness" as a salary may have changed market norms for executives earning less than \$1 million.⁴³ On this view, firms with CEOs making a six-figure salary might have raised that salary closer to \$1 million in response to Congress's implicit approval of that figure as a benchmark. In fact, some empirical work following soon after 162(m)'s enactment found that those lower CEO salaries did increase.⁴⁴ On the other hand, other studies found little evidence that Section 162(m) had an impact on salary growth rates,⁴⁵ finding no significant evidence of differences between firms that had paid more or less than \$1 million before the statute was adopted.⁴⁶

More importantly for our purposes, others noted that the increase in total compensation for executives was driven by the simultaneous rise in option awards. As discussed above, traditional stock options qualified for the performance-based-pay exception to 162(m).⁴⁷ But critics observed that there were good reasons to think that options (and, later, performance shares) tended to add more to total compensation sums than did the salary for which they are substituted.

As two of us have previously written, it is certainly plausible that performance-based compensation like options tends to raise compensation costs at firms.⁴⁸ Performance-based pay is riskier and therefore executives should require a premium to

compensation plans). *But see* Frederick Tung, *Pay for Banker Performance: Structuring Executive Compensation for Risk Regulation*, 105 NW. U. L. REV. 1205, 1207-08 (2011) (suggesting that bank executives' inside debt holdings may be beneficial).

42. See sources cited *supra* note 16.

43. See, e.g., Scott Schaefer & Rachel M. Hayes, *CEO Pay and the Lake Wobegon Effect*, 94 J. FIN. ECON. 280 (2009) (discussing previous suggestions of the phenomenon and developing a game-theoretic model for it).

44. See Steven Balsam & David Ryan, *Limiting Executive Compensation: The Case of CEOs Hired After the Imposition of 162(m)*, 22 J. ACCT., AUDITING & FIN. 599, 617-18 (2007); see generally David G. Harris & Jane R. Livingstone, *Federal Tax Legislation as an Implicit Contracting Cost Benchmark: The Definition of Excessive Executive Compensation*, 77 ACCT. REV. 997 (2002).

45. See Nancy L. Rose & Catherine Wolfram, *Regulating Executive Pay: Using the Tax Code to Influence CEO Compensation*, 20 J. LAB. ECON. 138, 166 (2002).

46. See *id.* They did find higher variation among "affected" firms that did not adopt plans to qualify pay as performance-based. *Id.* It is hard to interpret this datum, however, because plan qualification has no tax effect on the salary payments that are the fluctuating dependent variable. They concluded that "[t]his conclusion is consistent with the views expressed by many compensation consultants and corporate directors [they] have consulted [Their] results suggest that corporate pay may be more insulated from this type of blunt political pressure than it is from the more direct pressure brought to bear at the individual firm level by stakeholder groups or through the regulatory process." (citations omitted). *But see* Balsam & Ryan, *supra* note 44, at 600 (arguing that stickiness of pay practices for incumbent CEOs at the time of Section 162(m)'s adoption accounts for the lack of evidence for its effect).

47. See Murphy, *Politics*, *supra* note 16, at 328 ("Similarly, a variety of rules implemented in the early 1990s [including 162(m)] are largely responsible for fueling the subsequent option explosion"); Murphy & Jensen, *supra* note 16, at 49 (explaining how 162(m) drove the option explosion).

48. See Lund & Polsky, *supra* note 27, at 716-27.

compensate them for taking on that risk.⁴⁹ Moreover, stock options, the predominant form of performance-based compensation in the immediate aftermath of 162(m), were counted as costless under prevailing accounting rules at the time and in fact required no cash to be paid by the firm when granted.⁵⁰ Thus, there may have been less pressure on boards to hold option costs down as compared to salary which generated an accounting charge and cash flow issues. Finally, performance-based pay arguably weakens any “outrage constraint” otherwise imposed by shareholders that might otherwise keep pay levels in check, as executives appear to be paid only for new value created.⁵¹ As a result of these factors, a substitution of performance-based pay for salary could lead to a perverse *increase* in total compensation to top executives.

As described above, after the enactment of 162(m), overall levels of executive compensation did in fact increase, as did the proportion of pay that was performance-based. It remained an open question, though, as to whether 162(m) *actually caused* these results. 162(m)’s adoption coincided with market and shareholder forces pushing for higher levels of performance-based pay. Beginning in the early 1990s institutional shareholders began demanding higher levels of equity in pay packages as a way of aligning executives’ incentives with those of shareholders. Later, the SEC revised disclosure rules to require far more transparent information about public company compensation matters. The same time period saw the rise of influential proxy advisory firms such as ISS and Glass Lewis.⁵² In the wake of the financial crisis of 2008, the Dodd-Frank-Act included a provision—Say-on-Pay—that requires a regular non-binding shareholder vote on compensation decisions. In the light of all of these circumstances, we see, for example, ISS adopting incredibly detailed voting guidelines that emphasize as their foundational principle the maintenance of “appropriate pay-for-performance alignment.”⁵³

Was 162(m) leading this movement toward higher levels of performance-based pay, responding to it, or neither? A number of studies following the onset of the new tax rules attempted to get at the answer, albeit without complete success.⁵⁴ Hall and Liebman, for instance, found evidence of a “minor substitution of performance-related pay for salary” after the enactment of the rule.⁵⁵ Yet it proved impossible to control for the general trendline during the period toward greater use of options and other

49. *Id.* at 716.

50. See Kevin J. Murphy, *Explaining Executive Compensation: Managerial Power versus the Perceived Cost of Stock Options*, 69 U. CHI. L. REV. 847 (2002). Furthermore, SEC disclosure rules at the time did not require disclosure of the cost of most option grants, only the amount of options granted.

51. See Lund & Polsky, *supra* note 27, at 718.

52. For more on the role of ISS and Glass Lewis in general, see Stephen J. Choi, Jill E. Fisch & Marcel Kahan, *The Power of Proxy Advisors: Myth or Reality?*, 59 EMORY L.J. 869 (2010).

53. See ISS, UNITED STATES PROXY VOTING GUIDELINES: BENCHMARK POLICY RECOMMENDATIONS 39 (2019), <https://perma.cc/ZD4Z-FYPM>.

54. See Rose & Wolfram, *supra* note 45.

55. Brian Hall & Jeffrey Liebman, *The Taxation of Executive Compensation*, 14 TAX POL’Y & ECON. 1, 36 (2000).

performance-based pay.⁵⁶

II. The Fall of the Performance-Based Pay Exception

At the end of 2017, Congress enacted the wide-ranging bill known popularly as the TCJA.⁵⁷ Among many other things, the TCJA repealed the “performance-based” exception to 162(m)’s limitation on compensation deductions.⁵⁸ Beginning in the 2018 tax year, public firms would receive no deduction for compensation paid to covered officers over \$1 million, regardless of the form of that compensation. The change was sudden and, as far as we can tell, unexpected by firms, executives, and their tax counsel. While there had been several prior legislative proposals to eliminate the performance-based pay exception, none had gone so far as a committee vote by either the House Ways & Means or Senate Finance committees.⁵⁹ The House bill that ultimately became the TCJA included the repeal and was made public on November 2, 2017. The Senate bill, which was introduced on November 28, also provided for repeal, but also included a grandfather transition rule that exempted written binding arrangements that were in effect on November 2. The Conference Committee bill included the Senate version and was passed by both Houses on December 20 and signed into law by the President on December 22.

This “seismic shift”⁶⁰ provides close to a natural experiment regarding the consequentiality of 162(m) for then-existing executive pay practices. Somewhat complicating matters is the TCJA grandfather rule. In general, repeal of the performance-based pay exception became effective in taxable years beginning after 2017.⁶¹ The grandfather rule applied to compensation which is paid pursuant to a written binding contract that was in effect on November 2, 2017, and which was not modified in any material respect on or after such date.⁶² If the grandfather rule applied, compensation that was performance-based could still be deducted in 2018 and subsequent years.

In determining whether the grandfather rule applies, a key issue relates to so-called negative discretion. Recall that a bonus plan that allows for the board to use discretion to reduce (but not increase) a formulaically derived bonus amount would qualify as performance-based under pre-TCJA section 162(m). But does the existence of this negative discretion preclude the grandfather rule because the exercise (or not) of negative discretion is not part of a written binding contract in effect on November 2, 2017? In the government’s view, it depends. If the board, under applicable state law, could reduce the bonus down to zero, then the grandfather rule would not apply to

56. *See id.* at 24.

57. Tax Cuts & Jobs Act (TCJA), Pub. L. No. 115-97, 131 Stat. 2054 (2017).

58. *Id.* § 13601 (codified as amended at I.R.C. § 162(m)).

59. *See Doran, supra* note 13, at 844.

60. *See* David M. Kaplan, *Tax Reform Bill Tightens \$1M Limit on Deductibility of Public Company Executive Compensation*, TROUTMAN PEPPER (Dec. 19, 2017), <https://perma.cc/5QQP-Y6NH> (describing the repeal as “a seismic shift”).

61. TCJA § 13601(e) (codified as amended at I.R.C. § 162(m)).

62. *Id.*

any portion of the bonus.⁶³ But if applicable state law permitted only a partial reduction, then part of the bonus that could not be reduced would qualify for the grandfather rule.

Making matters more complicated, the government has acknowledged that the result under state law might not be driven exclusively by the explicit language in the plan. The preamble to proposed regulations on the topic explained:

Treasury Department and the IRS are aware, however, that compensation arrangements may purport to provide the corporation with a wider scope of negative discretion than applicable law permits the corporation to exercise. In that case, the negative discretion is taken into account only to the extent the corporation may exercise negative discretion under applicable law.⁶⁴

In other words, a plan that, pursuant to its explicit terms, would allow the board to reduce a bonus to zero would still qualify for the grandfather rule to the extent the corporation could establish that prior custom and practice actually precluded a reduction of the bonus under applicable state law.

Accordingly, the application of the grandfathering rule to an executive compensation arrangement depends on the particular facts and circumstances. If a bonus plan includes negative discretion (as is fairly common), some or all of the bonuses ultimately paid may be ineligible for the grandfather rule. Likewise, if an executive employment contract does not specify a particular number of equity awards to be granted each year or if it provides compensation committees or boards with negative discretion to reduce performance share awards or equity grants, the grandfather rule may not apply. For example, if a CEO employment contract provides for an annual grant of stock options subject to approval by the compensation committee, that approval requirement (if it would be upheld under state law) would negate the grandfathering possibility under the TCJA.

Grandfathering obviously poses a problem for analyzing the effect of 162(m)'s repeal since it biases post-TCJA pay arrangements toward the status quo ex ante. We would expect some firms to maintain existing pay arrangements not because 162(m)'s performance-based pay preference was not important, *but rather because it was*.

In fact, however, this is merely the tip of the stickiness iceberg. Even without grandfathering to confound matters, executive employment contracts generally have terms well beyond one or two years. Thus, many firms and executives were caught mid-contract by the change in tax law. While technically nothing would prevent the parties from renegotiating the contract, practical realities (including the potential for grandfathering) could often make midstream renegotiation unlikely. Therefore, it is possible that empirical analysis will show few if any immediate effects of the tax law change because of contracting lags. That is, the change to 162(m) might eventually be

63. See Certain Employee Remuneration in Excess of \$1,000,000 Under Internal Revenue Code Section 162(m), 84 Fed. Reg. 70356, 70365 (proposed Dec. 20, 2019) (to be codified at 26 C.F.R. pt. 1) (explaining that "applicable law (such as state contract law) determines the amount of compensation that a corporation is obligated to pay pursuant to a written binding contract in effect on November 2, 2017").

64. *Id.*

consequential but that fact might only become apparent over time as existing contracts expire.⁶⁵

Despite these stickiness problems, two sets of researchers have previously attempted to measure the effect of 162(m)'s repeal in the two years since the TCJA, with differing results. De Simone, McClure, and Stomberg exploited an accounting quirk in the new rule to construct a difference-in-differences model.⁶⁶ The elimination of the performance-based pay exception was generally effective for tax years beginning after 2017 (subject to the grandfather rule).⁶⁷ Because firms may have different fiscal years, during the first part of 2018 the new tax rule was generally applicable to firms whose fiscal year began early in the year, but not to those firms whose fiscal year began later. De Simone, et al. identified early fiscal-year-start firms as the treatment group and late fiscal-year-start firms as the control group and compared pay arrangements within the group over the pre- and post-TCJA periods.⁶⁸ Obviously, this strategy was only available for the early part of 2018 and cannot be replicated for later periods.

De Simone et al. find no differences between compensation trends at treatment and control group firms.⁶⁹ Specifically, they find no relative changes in total CEO compensation, salary, performance-based pay, or pay-performance sensitivity.⁷⁰ These results are consistent with the hypothesis that, at least as of 2017-2018, firms' pay decisions were mainly driven by considerations other than tax.⁷¹ However the results may

65. Obviously, the TCJA did a lot more than merely amend section 162(m); these other reforms could possibly influence executive compensation design. Most dramatically, the TCJA reduced the corporate tax rate from 35 percent to 21 percent. TCJA § 13001 (2017). This change correspondingly reduces the stakes of section 162(m). Before the TCJA, a disallowed deduction would cost a tax-paying corporation 35 cents on the dollar. Now, a disallowed deduction only costs 21 cents on the dollar. However, because the new section 162(m) eliminated the old provision's loopholes, the lowering of the stakes should be insignificant. If the loopholes had persisted, perhaps the lowering of the stakes would cause companies to not go to the trouble of exploiting them? But under new section 162(m), the loopholes are gone and, therefore, the provision should be factored out of compensation design decisions regardless of the corporate tax rate.

66. De Simone et al., *supra* note 21. The difference-in-differences method is a workhorse of modern econometrics. JOSHUA D. ANGRIST & JORN-STEFFEN PISCHKE, *MOSTLY HARMLESS ECONOMETRICS* xi (2009). The premise is that there are two groups of similar people or organizations. *Id.* at 227-31. One of these groups, the "treatment" group, is subject to some new policy, while the other, the "control," is not. *Id.* These groups don't need to be identical before the "treatment" happens, but they should be similar enough that we can expect that, if not for the treatment, they would each have continued along on the path they were on before. *Id.* at 231-33. We can then compare the two groups after the treatment — the "difference" — and see whether the gaps between them have gotten larger or smaller — the "differences." *Id.* By assumption, any change in the paths the two groups are following is caused by the treatment. *Id.* To further strengthen this assumption, researchers can control for other observable features of the two groups, so that if these features are also changing around the same time as treatment, we can account for any change in the respective paths that are caused by the controls. *Id.* at 236-37.

67. De Simone et al., *supra* note 21, at 3.

68. *Id.* at 4.

69. *Id.* at 5.

70. *Id.* at 22-27.

71. *Id.* at 24 ("[O]ur model may not be descriptive of optimal contracting for the average firm

also indicate that existing executive employment arrangements were sticky during the relevant six months for treated firms. De Simone et al. locate the potential for this stickiness in the potential for grandfathering that may have caused firms to resist making changes quickly.⁷² But, as discussed above, the nature of multi-year CEO contracts themselves may cause firms to be slow to adapt to a change in law as well. Whatever the cause of stickiness, its potential complicates their finding of no change post-TCJA.⁷³

Luna, Schuchard, and Stanley also studied the effect of 162(m)'s repeal in the immediate aftermath of the TCJA.⁷⁴ They also use a differences-in-differences analysis by identifying certain firms as "tax-sensitive."⁷⁵ "Tax-sensitive" firms, on their account, are those that paid their CEOs more than \$1 million in total compensation but less than \$1 million in what they describe as non-performance-based pay.⁷⁶ That is, "tax-sensitive" firms are those that seem to have been taking advantage of the tax preference previously provided by 162(m).⁷⁷ This treatment group is compared with a control group consisting of firms that paid their CEOs more than \$1 million in what they code as non-performance-based pay,⁷⁸ and were therefore apparently not responding to the 162(m) incentive (at least fully). When Luna et al. measure for changes post-TCJA, they find greater salary increases at tax-sensitive firms.⁷⁹ Similarly, when they observe salary share of total compensation as the dependent variable, they find marginally significant effects in the post-TCJA period, with increases in the share at "tax-sensitive" firms.⁸⁰ They note the potential stickiness of CEO contracts,⁸¹ but, given their findings of actual post-TCJA change, do not dwell on it.

In addition to repeal of the performance-based pay exception, the TCJA included another interesting feature that allows us to further test the tax law's consequentiality. The TCJA eliminated one relatively easy avoidance strategy — using deferred compensation to avoid the cap. Prior to the TCJA, section 162(m) applied only to compensation

in our sample — perhaps because firm-level tax costs are not a sufficiently important consideration for firms when designing CEO compensation packages. In other words, it is possible that the pre-TCJA tax benefits of performance-based stock compensation were not a primary determinant of their usage.").

72. *Id.* ("[T]he lack of immediate response following the TCJA is consistent with boards hoping that existing pre-TCJA contracts would be grandfathered under the old deductibility rules, and thus not wanting to disqualify existing contracts by altering them.")
73. De Simone et al. offer an additional analysis of health care firms who experienced a repeal of 162(m) at an earlier date and find no evidence of different compensation trends at such firms relative to other firms. *See* De Simone et al., *supra* note 21, at 25. Unfortunately, their sample only includes 17 firms and can therefore only be partially instructive.
74. *See* Luna et al., *supra* note 21.
75. *Id.* at 14.
76. *Id.*
77. *Id.*
78. *Id.*
79. *Id.* at 20.
80. *Id.* This result disappears, however, when they attempt to deal with potential identification bias by using propensity score matching. *Id.* at 26. In that specification, the effect on salary remains, however. *Id.*
81. *Id.* at 27.

paid to the then-existing CEO and other four covered employees, as determined on a year-by-year basis in the year that compensation is paid. Payments to a retired employee would therefore never be subject to the cap. Accordingly, deferred compensation arrangements could be used to circumvent old 162(m). One such arrangement is known as “elective deferrals,” which allow an executive to choose to defer a portion of her future salary.

For example, a CEO with a salary of \$1,100,000 might elect to defer \$100,000 of her salary. If so, the \$100,000 (plus an investment return) would be paid to the CEO after she retires. Under old 162(m), none of the company’s \$1,100,000 salary deduction would be denied. The first \$1,000,000 does not exceed the cap, and the \$100,000 of deferred compensation will be paid out after retirement, when the CEO’s covered-employee status ceases.

The TCJA negated this strategy. Under new 162(m), in general, once a covered employee, always a covered employee.⁸² Therefore, in the example above, the \$100,000 of deferred compensation will be subject to the cap in the year in which it is paid because the retired executive was a covered employee.⁸³

Where executives are expected to earn more than \$1,000,000 in each post-retirement year in which they receive retirement payments, this change could discourage elective deferrals because the company’s deductions will inevitably be denied, regardless of any elective deferrals; prior to the TCJA, elective deferrals would have preserved deductions. On the other hand, in the context of more modestly paid retired executives, deferred compensation may still be attractive. In the example above, if the \$100,000 of deferred compensation is paid in a year where the executive earns \$900,000 or less of total compensation from the company, it will be deductible because the \$1 million cap is not exceeded. This spreading of pay over multiple tax years may even be more attractive after the repeal of the performance-based pay exception because it is now the only avoidance strategy left to play.

Although it is not our main purpose here to critique the earlier researchers, they were not lawyers and did not appear to fully account for all of the relevant technical issues. When Luna et al. calculate how much firms are paying, they include all of the organization’s reported salary for each executive. But these reported salary figures represent compensation *earned* by the executive in that year, not compensation paid in that year. Section 162(m) generally applies to compensation when it is paid. If any portion of salary was deferred, the reported figure will overestimate the amount of pay subject to 162(m). Thus, Luna et al. mismeasure both total compensation and also salary, the most important component of non-performance-based compensation.

82. The permanent covered employee status only applies to individuals who were covered employees in tax years beginning in 2017 or later. See I.R.C. § 162(m)(3)(C) (2017).

83. The TCJA also designated every CFO a “covered employee” subject to the deductibility limitation. Arguably, this provides a convenient treatment group as well. However, internal informal restraints may have shaped CFO compensation by reference to CEO compensation and compensation of other top executives. Therefore, it is unclear whether pre-TCJA CFO compensation was completely free from the influence of 162(m)’s performance-based pay exception.

III. Empirical Analysis

A. The Basic Set-Up

We revisit the investigation of 162(m) with some methodological wrinkles that we think overcome some of the challenges faced by earlier researchers. Our aim is to evaluate how important 162(m)'s tax incentives were for CEO compensation practices during the period around the time of the TCJA's enactment. Specifically, we look to see whether firms shifted their pay to be less performance-based once there was no longer any tax advantage for performance-based pay. We also examine whether pay decreased based on the hypothesized correlation, described in Part II, between performance-based pay and higher overall pay levels.⁸⁴ Relatedly, we look to see whether firms and executives altered their deferred compensation practices because after the TCJA covered employees are now covered forever, whereas prior to the TCJA covered status was determined on an annual basis.

Like prior researchers, we employ standard difference-in-differences techniques to estimate the effect of TCJA's changes. This means that we are comparing two similar groups, one subject to TCJA and the other not, and observing whether TCJA is correlated with differences in outcomes. Furthermore, within these two groups we identify a pair of key sub-groups, one of which (firms that paid no federal income tax) that we expect to be relatively indifferent to TCJA's changes to their tax rules, and the other (firms that paid tax) that would care more. We expect the impact of TCJA, if any, to be most noticeable in the tax-sensitive firms.

The repeal of the performance-based pay exclusion generally affected firm taxable years beginning in 2018, so any treatment group would necessarily be comprised of firms who have filed proxy statements in 2019 and 2020. This creates obvious problems. First, for 2020, as of this writing we only have data from firms that reported in the first half of the year. Second, as previously discussed, executive compensation arrangements will often be susceptible to stickiness because of contracting realities or the TCJA 162(m) grandfather rule. For these reasons, any attempt to study the effect of the changes to 162(m) may tend to underestimate the ultimate effect of TCJA's changes.

We respond to the problem of stickiness by restricting our treatment group to new CEOs who entered into contracts during the two-year post-TCJA period. Because these executives were entering into new arrangements, the parties were not explicitly constrained by existing contracts and the grandfather rule would be inapplicable.⁸⁵ To obtain a close comparison group of similarly situated executives, we compare this treated group to the set of newly-hired CEOs in the years just before TCJA, ranging from 2011 to 2017.⁸⁶ We selected the six-year pre-period as a compromise between two

84. See *supra* notes 50–54 and accompanying text.

85. See Certain Employee Remuneration in Excess of \$1,000,000 Under Internal Revenue Code Section 162(m), 84 Fed. Reg. at 70365.

86. With this method, our results are assuming that any differences we observe between the two groups are caused either by TCJA or by other factors we can measure and include in our regression analysis. For example, if we are worried that firms might be more

considerations. On the one hand, the design of CEO contracts has changed over the last decade, so that hires from a long time before TCJA may not be a good comparison group. We balance this against the enhanced ability to cleanly identify year effects and other controls that results from a larger set of observations.

It nevertheless remains possible that CEO pay changed around the time of the TCJA for entirely independent reasons for which we cannot control. Even if we were to find no change to practices, new 162(m) may simply be counterbalancing an omitted variable—say increased shareholder pressure for performance-based pay—and we would be unable to confidently interpret a finding of no change as meaning that old 162(m) was inconsequential. For instance, one obvious candidate for an omitted variable is the simultaneous dramatic reduction in the corporate tax rate. If firms did not respond to the change in deductibility, that may have been driven in part by the reduced consequences of the deduction's loss.

Second, in using CEOs hired prior to TCJA as a control, we assume that anticipation of the 162(m) amendments did not affect their contracts. On this score, we have something of an advantage in that the repeal of the “performance-based” exception to 162(m) was apparently a surprise to all in late 2017. Therefore, we have a more plausible treatment group than one might have in normal instances of legal change. Nevertheless, it is possible that information about the change in law leaked earlier during the second half of 2017. Still, we obtain essentially the same results when we omit observations from the time very close to enactment, which makes us more confident this timing issue is not driving our outcomes.

Another distinguishing feature of our approach is to use the employer firm's tax status to divide our sample into “treated” and “control” firms. We define firms with zero reported annual federal taxes paid as the “control” firms, which we call “tax-insensitive” (a different use of the term from the one used by Luna et al.). Usually, of course, employers can claim a deduction for paying their executives, and 162(m) operates by denying this deduction to some firms. But organizations that already owe zero taxes for a given year do not immediately benefit from additional deductions (and may in fact never benefit from them). Thus, at these firms in these years, we should expect 162(m) to have a smaller impact.⁸⁷

We follow De Simone et al. in including a set of firm controls that are standard in the compensation literature (sales, return on assets, return on equity, standard deviation of 5-yr return on assets, standard deviation of 5-yr return on equity, and 5-year

profitable after TCJA, we can see that in their public reporting and account for (“control” for) that difference. Likewise, we can account for factors that are not directly observable but are correlated with the year in which they happened—say, any impacts of presidential election—simply by controlling for the year in which a set of observations occurred. We call these “year effects.” See ANGRIST & PISCHKE, *supra* note 66, at 223.

87. That is not to say that 162(m) would necessarily have zero impact at zero-tax firms. A firm's unused deductions can be held for claiming in later years, among other uses. I.R.C. § 172(a). However, these “carried over” losses are less valuable for a variety of reasons, including the simple time value of money. MYRON S. SCHOLLES ET AL., *TAXES AND BUSINESS STRATEGY: A PLANNING APPROACH* 129, 199 (5th ed. 2016). Prior researchers find that many firms in a zero-tax position essentially ignore the possible value of carried-over losses. We discuss these issues in more detail in Appendix B.

mean market/book ratio) including indicators for the firm's industry (two-digit SIC). We also include executive age, which we think is standard but is not reported in De Simone et al. In some estimates, we include additional controls to attempt to further rule out rival explanations for some of our results. In particular, like Luna et al., we include a control for whether a firm is a multi-national entity, based on whether it reports any pre-tax foreign income or foreign currency income. To distinguish newer firms or other firms with substantial growth opportunities, we include firm age, historic 5-year ratio of R&D to sales, and historic 5-year sales growth (we already include market/book ratio, a standard growth measure, in our baseline estimates). To test the possibility that executives may avoid some forms of deferred compensation because of firm credit risk, in some estimates we include our measure of the firm's average credit rating.⁸⁸

Finally, to account for the possibility that some initial CEO contracts are of differing lengths in the first year we observe them, when we observe a partial year, we control for the number of days of the fiscal year in which the CEO was employed, as well as the number of days squared. We obtain similar results when we just omit first-year contracts.

In sum, our basic set-up is to compare the impact of TCJA at treated (relatively tax-sensitive) firms against control (relatively tax-insensitive) firms. Additional technical details regarding our data and approach are set forth in Appendices A and B.

B. Descriptive Statistics

To provide an initial overview of the data, Table One presents summary statistics on our key variables. We divide the table into panels for tax-paying firms (i.e., those reporting non-zero federal taxes paid) and non-tax payers.

88. Many of these variables regularly take both positive and negative values. Since many, especially firm-level variables, are highly skewed, our strong preference is to estimate in logs. We therefore employ the inverse hyperbolic sine (arcsinh) of all our non-indicator variables. It is true that arcsinh is not concave for negative numbers, Martin Ravallion, *A Concave Log-Like Transformation Allowing Non-Positive Values*, 161 *ECON. LETTERS* 130, 131 (2017), but this is not an interpretive issue for any of our data. The inverse hyperbolic sine is an exponential function and so, at least for values not close to zero, interpretation is similar to a traditional log-log estimate. For ease of reading we, thus, call these specifications "log-log."

Table One: Summary Statistics by Tax-Paying Status

	No-Tax Firms		Tax Paying Firms	
	Mean	SD	Mean	SD
Exec Variables				
Total Compensation	5938.69	6154.17	7685.75	8389.80
Salary	831.73	398.87	937.62	494.09
Performance Pay (DS)	4524.46	5365.30	6022.56	7417.03
Performance Pay (GLP)	3352.19	4151.00	4686.60	5948.60
Salary Share	0.27	0.23	0.21	0.18
Performance (GLP) Share	0.64	0.26	0.70	0.22
Voluntarily Deferred Comp	91.19	588.15	200.49	1173.51
Exec Age	56.11	7.21	56.55	7.23
Combined LTCG Rate	25.20	5.34	25.23	5.22
State Ordinary Rate	5.99	4.43	5.91	4.02
Combined Ordinary Rate	42.51	3.83	42.47	3.65
Firm Variables				
Sales	5513.42	16783.42	10046.72	30329.14
Return on Assets	0.07	0.14	0.17	0.11
Return on Equity	0.36	19.84	0.15	3.50
5-Yr SD of Return on Assets	0.06	0.07	0.04	0.05
5-Yr SD of Return on Equity	1.35	14.41	0.48	6.06
5-yr Book:Market Mean	0.87	0.69	0.58	0.44
R&D: Sales Ratio	0.27	4.68	0.03	0.08
5-yr Change in Sales Ratio	3.73	118.13	0.53	3.05
Multi-National Firm?	0.61	0.49	0.68	0.47
Firm Age	26.33	21.06	29.19	22.58

Notes: Observations: 6,487. Covers calendar years 2011-2020. Executive dollar values in thousands of 2019 dollars. Firm dollars in millions of 2019 dollars. Performance Pay (DS) refers to the measure of performance pay computed by De Simone et al. "GLP" indicates the variation on performance pay calculated by Galle, Lund, and Polsky. "LTCG" is the long-term capital gains rate.

The mean total compensation over the period we observe is about \$5.94 million for tax-indifferent firms and \$7.69 million for tax payers. The tenth percentile of total pay is \$1.1 million, which is to say that the revised 162(m) would be relevant to more than 90% of the firm-years we observe. In about four-fifths of sample years firms paid non-incentive-based compensation in excess of \$1 million, suggesting that the old 162(m) offered tax incentives to most firms in the sample. Depending on its exact components, performance pay is three to four times larger than salary, on average, with between 56 and 78% of total compensation performance based. Tax-paying firms are considerably larger than tax-indifferent firms, as the former have average sales of \$10 billion while sales for the latter averaged only \$5.5 billion. Both sets of firms are quite profitable on average, yielding annual profits of between 7 and 17% on assets. Zero-tax firms are much more R&D intensive.

Notably, tax-paying firms appear to use more performance pay, which would be consistent with the theory that 162(m) affects compensation. But the fact that these firms are also different on other dimensions helps to motivate our use of multivariate

regression, so that we can explore whether the difference in performance pay is driven by taxes or instead by these other differences. Likewise, we see that executives defer nearly twice as much salary at tax-paying firms. We'll explore whether this relationship is causal shortly.

For another way of slicing the descriptive data, Table Two reports these same summary statistics, but this time divided in time. We present mean values for firms in the years between 2011 and 2017, and for the data we have afterwards. Our dividing line is based on the date the firm's CEO was hired; firms whose CEO in a given firm-year was hired before TCJA appear in the column "Pre-TCJA." Obviously, the way that time works is that only firm years after 2017 can be included in the "Post-TCJA Hire" column, whereas the "Pre-TCJA Hire" column includes years both before and after 2017. However, since our sample covers only the first two years of a CEO's tenure, there are no Pre-TCJA hires in our data from 2019 or 2020.

Table Two: Summary Statistics by CEO Hire Date

	Pre-TCJA Hire		Post-TCJA Hire	
	Mean	SD	Mean	SD
Exec Variables				
Total Compensation	7028.08	7687.78	7382.95	5230.22
Salary	909.35	467.34	841.09	298.42
Performance Pay (DS)	5409.28	6757.37	6230.43	5160.61
Performance Pay (GLP)	4161.93	5389.44	4111.00	3260.80
Salary Share	0.24	0.20	0.21	0.20
Performance (GLP) Share	0.67	0.23	0.74	0.22
Voluntarily Deferred Comp	172.12	1102.56	65.76	126.54
Exec Age	56.66	7.25	52.92	7.23
Combined LTCG Rate	25.16	5.23	26.61	5.49
State Ordinary Rate	5.87	4.11	4.94	4.36
Combined Ordinary Rate	42.44	3.68	42.44	4.19
Firm Variables				
Sales	8413.99	26375.98	8401.71	12020.34
Return on Assets	0.13	0.12	0.12	0.16
Return on Equity	0.19	9.65	0.05	0.53
5-Yr SD of Return on Assets	0.04	0.05	0.05	0.08
5-Yr SD of Return on Equity	0.68	8.61	0.16	0.31
5-yr Book:Market Mean	0.69	0.54	0.67	0.51
R&D: Sales Ratio	0.24	7.45	0.03	0.06
5-yr Change in Sales Ratio	1.23	55.47	0.27	0.63
Multi-National Firm?	0.61	0.49	0.50	0.50
Firm Age	27.90	22.05	24.87	19.27

Notes: Observations: 6,487. Covers calendar years 2011-2020. Executive dollar values in thousands of 2019 dollars. Firm dollars in millions of 2019 dollars. "Pre-TCJA Hire" indicates that, for a given firm-year, serving CEO was hired before effective date of TCJA.

In this table, we observe that for CEOs hired after TCJA, the fraction of pay delivered in salary seems to be about three percentage-points lower after TCJA, a 12.5%

decline, while performance share increases. Voluntarily deferred compensation falls by almost two-thirds. Again, though, we can also observe some important differences in firms, as firm-years with post-TCJA hires see lower R&D and a smaller return on equity.

We can also see how the differences between tax-paying and tax-indifferent firms evolved over time. Figures One and Two plot these patterns for some key outcomes of interest in our analysis: total compensation, performance pay, salary, and the share of compensation paid as salary. In these graphs, we are depicting the averages among executives in the first two years of their contract in the respective years. To make interpretation easier, averages for 2018 and 2019 omit executives whose contract was signed before TCJA. Thus, the means for the post-TCJA years include only contracts reflecting TCJA changes.

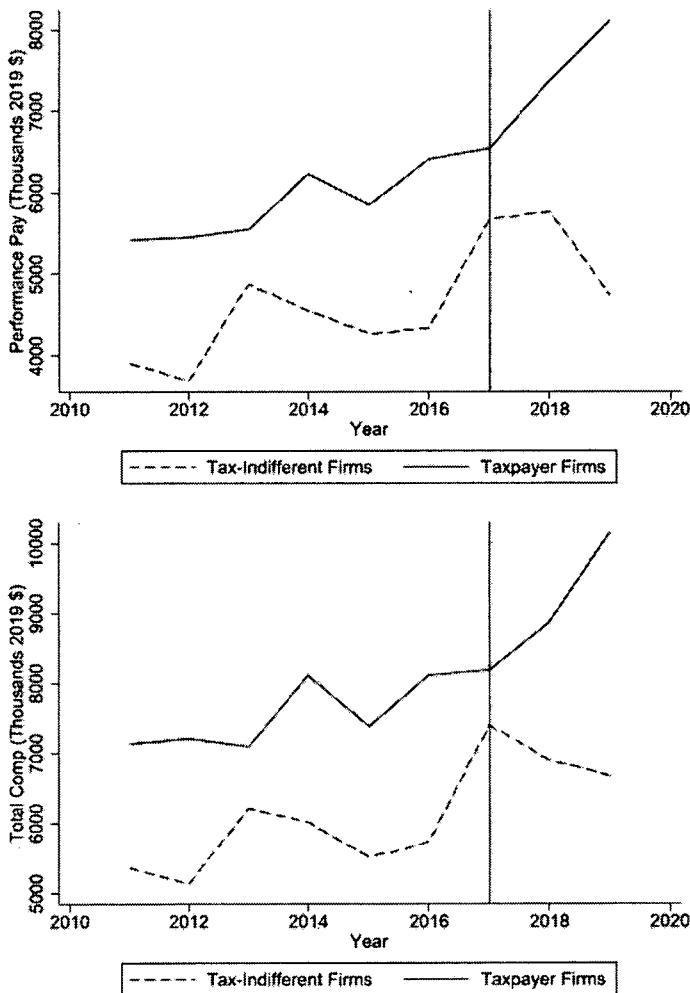


FIGURE ONE: PERFORMANCE PAY (TOP) AND TOTAL COMPENSATION

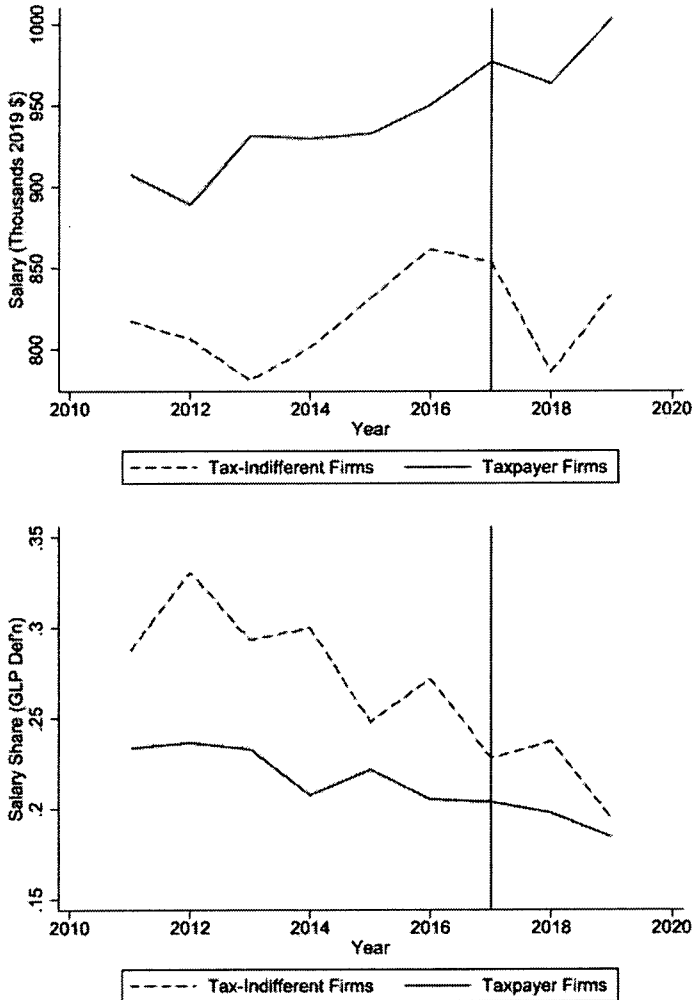


FIGURE TWO: SALARY (TOP) AND SALARY SHARE

On the whole, the figures seem inconsistent with the hypothesis that TCJA importantly affected compensation practices. At firms where tax planning was most important, we see that contracts after TCJA moved in the opposite directions from what tax planning would suggest: salary, total compensation, and performance pay were all up. The share of compensation paid as salary declined slightly at both kinds of firms, but well in line with pre-TCJA trends.

C. Regression Results: Salary Changes, Salary Share, and Total Compensation

Let's now examine to what extent TCJA seems to have actually caused any of these differences. Again, our focus is on whether repealing the preference for performance pay affected the components of executive compensation. As in De Simone et al., we look at the raw amounts (adjusted, of course, for inflation) of salary and performance

pay (including and excluding bonuses), and then at the portion of the executive's pay in the form of salary and performance pay. For comparison purposes, we include estimates both for the De Simone et al. definition of performance pay as well as an alternative version in which we exclude time-vested stock.⁸⁹

Table Three summarizes these results. For ease of reading, we suppress reporting of the control variables, but these are available to interested readers. In these regressions, the key variable of interest is the interaction term, *Post-TCJA Hire x Tax-Payer*. This represents the relative impact of the TCJA on CEOs at firms that are the most sensitive to tax considerations.

Table Three: Effect of 162(m) on Components of Executive Comp

VARIABLES	(1) Salary Amount	(2) Amount of Perf. Pay (DS def'n)	(3) Amount of Perf. Pay (GLP Def'n)	(4) Salary Share	(5) Perf. Share (DS def'n)
Hired After TCJA?	0.0164 (0.0945)	-0.315 (0.271)	0.148 (0.300)	0.0824* (0.0445)	-0.0549 (0.0402)
Tax-Payer Firm	0.0241 (0.0291)	0.109* (0.0646)	0.168** (0.0692)	-0.00298 (0.00536)	0.00566 (0.00638)
Post-TCJA Hire x Tax-Payer	0.0614 (0.104)	0.200 (0.357)	-0.244 (0.399)	-0.0630 (0.0505)	0.0305 (0.0468)
Observations	6,166	6,166	5,291	6,157	6,157
R-squared	0.145	0.242	0.261	0.255	0.175

Notes: Standard errors clustered by firm in (parenthesis). **:statistically significant at the 5% level. *:statistically significant at the 10% level. All Cols. use the inverse hyperbolic sine of all non-indicator variables. All columns include controls for multi-national status, year and two-digit SIC fixed effects, executive's age, as well as firm sales, return on assets, return on equity, age, standard deviation of firm's five-year return on assets and equity, and five-year mean book:market ratio, the firm's R&D:sales ratio and its ratio of five-year change in sales, and combined LTCG rate, state ordinary rate, and combined state-federal rate in the headquarters state.

We mostly find no significant results. There is some suggestion in our alternative performance pay measure (Table Three, Col. Three) that performance pay was higher for tax-paying firms *before* TCJA, with the coefficient on the *Tax-Payer Firm* variable positive and significant. But we see (in untabulated results) no similar effect for performance *share* under that definition. Instead, the 95% confidence interval of the coefficient on pre-TCJA taxpayer status runs from -.01 to .017, which is consistent with either very small increases or decreases. If 162(m) or TCJA affected firms' incentives to use greater salary relative to performance-based pay, those effects are not evident in our data.

Although we are unaware of any reason to think that hiring firms expected the 162(m) change, it is possible that unbeknownst to us firms somehow anticipated the

89. As we explain in Appendix A, time-vested stock does not count as performance-based but for data availability reasons seems to have been treated as such by De Simone et al.

loss of deductibility for performance-based compensation and adjusted 2017 contracts for new CEO hires. Therefore, as a robustness check, we use new CEOs hired in 2015 and 2016 (but not 2017) as the control group. In untabulated results, we continue to find no significant coefficients for post-TCJA hires across any of our specifications.

We next consider evidence on whether 162(m) had any impact on total CEO pay. Recall that when CEOs receive incentive-based pay, theory suggests that they should be paid more in total, since they must be compensated for taking on additional risk.⁹⁰ Thus, if firms were sensitive to 162(m)'s deductibility limitations and reduced performance-based pay after TCJA, they should have been able to pay less overall. Table Four reports our investigation of that possibility.

Table Four: Effect of 162(m) on Total Compensation

VARIABLES	(1) Baseline	(2) w/ Exec Tax Controls	(3) w/ Exec Tax & Added Firm Controls	(4) Levels w/ Exec Tax & Added Firm Controls	(5) Poisson w/ Exec Tax & Added Firm Controls
Hired After TCJA?	-0.352* (0.197)	-0.354* (0.194)	-0.366* (0.198)	0.0630 (0.266)	-0.0377* (0.0221)
Tax-Payer Firm	-0.0143 (0.0265)	-0.0136 (0.0267)	-0.0153 (0.0270)	0.0915*** (0.0330)	-0.00145 (0.00299)
Post-TCJA Hire x Tax-Payer	0.362 (0.222)	0.390* (0.219)	0.384* (0.223)	0.190 (0.293)	0.0400 (0.0247)
DS et al. Controls	Y	Y	Y	Y	Y
Add'l Firm Controls	N	N	Y	Y	Y
Observations	6,487	6,441	6,166	6,166	6,166
R-squared	0.378	0.377	0.395	0.161	

Notes: Standard errors clustered by firm in (parenthesis). ***:statistically significant at the 1% level. *:statistically significant at the 10% level. For Cols. 1-3, we use the inverse hyperbolic sine of all non-indicator variables. For Col. 5, independent variables are logged. All columns include controls for multi-national status, year and two-digit SIC fixed effects, executive's age, as well as firm sales, return on assets, return on equity, age, standard deviation of firm's five-year return on assets and equity, and five-year mean book:market ratio. "Exec tax controls" are combined LTCG rate, state ordinary rate, and combined state-federal rate in the headquarters state. "Added firm controls" are the firm's R&D:sales ratio and its ratio of five-year change in sales.

Instead, we confirm De Simone et al.'s finding that, although coefficients are negative, there is no measurable effect of hires after TCJA enactment on total compensation at traditional (i.e., 5% or less) levels of statistical significance. Likewise, we see no significant differences between tax-paying and non-tax-paying firms before TCJA. If anything, as in Figure One, there is modest evidence that pay levels are *higher* after TCJA for tax-sensitive firms. Confidence intervals are sufficiently wide that we cannot rule out large increases for these firms, and our point estimates are all positive and relatively large in economic terms. Even if pay levels were lower for some firms after

90. See *supra* notes 51–54 and accompanying text.

TCJA, the fact that pay was higher at firms where taxes matter most suggests it was not the TCJA itself that caused such a change.

These findings are persistent across a wide variety of different specifications, as summarized in Table Four. For example, we use several different mathematical approaches to calculate regression results and include some estimates in which we omit local individual tax rates or measures of firm growth opportunities.⁹¹ None of these appreciably affect the null result.⁹²

Our findings suggest that tax considerations revolving around 162(m) were not playing particularly consequential roles for major compensation decisions as of the 2016-2019 period. One potential explanation for this is that other non-tax forces described above⁹³ were independently driving compensation choices so that the removal of tax incentives with the TCJA did not change the decision makers' calculus.

D. Gaming the Cap

Next, we test the theory that deferred compensation was used prior to TCJA to evade the 162(m) cap and, if so, whether the TCJA changed this behavior. As discussed, nonqualified deferred compensation arrangements, such as elective salary deferrals, could be used under old 162(m) to avoid the cap by pushing compensation deductions into years in which the executive was retired and therefore was no longer a covered employee.⁹⁴ Congress presumably had these practices in mind when TCJA expanded the definition of covered employee to include any individual who had previously been a covered employee. In other words, after TCJA, once a covered employee, always a covered employee. This negates the deferred compensation 162(m) avoidance strategy. Our understanding is that elective salary deferrals were used at least in part for this purpose.⁹⁵

Execucomp reports elective salary deferrals as "deferred compensation employee total" or "DCET." To test whether DCET had been used specifically to end-run the 162(m) limitation, we implement the triple-differences method described in Appendix A. Briefly, we examine the relative prevalence of DCET among firms that pay more than \$1 million of non-incentive-based compensation. Since after TCJA this threshold is no longer meaningful, we expect that DCET use among these firms will drop,

91. We describe these and the other control variables in more detail in Appendix A.

92. As a robustness check on whether using the inverse hyperbolic sine technique drives our result, we re-estimate each specification using poisson regression and the levels (rather than IHS) of the outcome variable. Point estimates are smaller but no more precise in poisson. Table Three, Col. Five reports one of these, in which we include all our controls, but none of the poisson estimates finds anything appreciably different than the log-log regressions.

93. See *supra* notes 52-53 and accompanying text.

94. See *supra* notes 81-82 and accompanying text.

95. See, e.g., Michael Doran, *Deferred Compensation Unbound 8* (Apr. 28, 2020) (unpublished manuscript) (<https://perma.cc/HQ78-T4LN>) ("It was long understood that deferring compensation beyond the termination of employment bypassed the section 162(m) deduction limit, a point that gave another tax reason for executives to defer receipt of their pay." (citations omitted)).

especially among taxpayer firms that might have been especially motivated to use the technique prior to 2018. Table Five summarizes our results. Again, for ease of reading we omit reporting of most control variables.

Table Five: Effects of 162(m) on Deferred Cash Compensation

VARIABLES	(2)	(3)	(2)	(3)
	DCET DS Controls	DCET All Controls	DCET All Controls	DCCT All Controls
TCJA x Over 2017 Cap	0.438*	0.384		
	(0.265)	(0.272)		
Tax-Payer x Over 2017 Cap	0.377**	0.325**		
	(0.156)	(0.163)		
TCJA x Tax-Payer x Over 2017 Cap	-0.692**	-0.605*		
	(0.347)	(0.355)		
TCJA x Tax-Payer x Over 2018 Cap			2.854***	2.647***
			(0.786)	(0.759)
Arcsinh Combined LTCG Rate	-2.658**	-2.147*	-2.454*	-1.114
	(1.234)	(1.261)	(1.258)	(1.098)
Arcsinh State Ordinary Rate	0.382***	0.374***	0.363***	0.415***
	(0.0707)	(0.0721)	(0.0723)	(0.0610)
Observations	6,509	6,232	6,166	6,166
R-squared	0.122	0.130	0.131	0.197

Notes: Standard errors clustered by firm in (parenthesis). ***:statistically significant at the 1% level. **: statistically significant at the 5% level. All columns employ the inverse hyperbolic sine of all non-indicator variables. All columns include controls for a full set of partial cross-interactions, year and two-digit SIC fixed effects, combined ordinary tax rate, and executive's age, as well as firm sales, return on assets, return on equity, age, standard deviation of firm's five-year return on assets and equity, and five-year mean book:market ratio. Columns Two-Four also control for firm's multi-national status, R&D:sales ratio, and ratio of five-year change in sales. "TCJA" = CEO hired post-TCJA. "Over 2017 Cap" = CEO received more than \$1m in non-incentive compensation. "Over 2018 Cap" = CEO received more than \$1m in any compensation.

We find evidence strongly consistent with the use of DCET to avoid 162(m), but also some suggestive evidence that TCJA did not end the use of DCET for a similar purpose. As expected, relative to uncapped or non-taxpayer firms, DCET is higher among capped taxpayer firms (i.e., those paying more than \$1 million in non-incentive comp) prior to TCJA; this is the positive and significant coefficient for the variable *Tax-Payer x Over 2017 Cap* in Table Five Col. One. Use of DCET is markedly lower in this situation after TCJA, as shown by the large negative and significant coefficient for the variable *TCJA x Tax-Payer x Over 2017 Cap* in that same column. In other words, if a firm was paying more than \$1 million in non-incentive-based compensation before TCJA, it was also using DCET, but after TCJA this was largely no longer the case. That fits our prediction. We obtain similar results, but slightly less precisely estimated, when we include some additional controls not used in De Simone et al. (Table Five, Col. Two).

As we noted earlier, DCET can still allow some firms to avoid the new 162(m) \$1

million cap by moving compensation into retirement years in which a covered executive might earn less than \$1 million in compensation. Some firms might have more than \$1 million in total compensation but less than \$1 million in non-incentive-based pay (say, a firm that pays \$10 million in performance pay and only \$100,000 in salary). These firms would not have benefited from DCET in 2017 but potentially could in 2018.

To further test this possibility, we run several additional regressions. In each of these, we include interactions among taxpayer status, TCJA, and whether a CEO receives more than \$1 million in total realized compensation in a year; we emphasize that this is a different total than the total reported in the SEC-mandated Summary Compensation Table, but instead is the sum of taxable annual income. In essence, this is the flip of the tests reported in Table Five Cols. One and Two: \$1 million in total compensation is not a meaningful threshold before 2018, so we expect to see effects for that term only post-TCJA. We report this analysis in Table Five Col. Three.

We find that DCET is markedly higher post-TCJA among taxpayer firms but only if the executive has total taxable income of more than \$1 million. That is, on average DCET is two or three times larger among the firms where DCET would most usefully avoid the new 162(m) limitation.

There is also some evidence that firms use their own contributions to the CEO's retirement plans for this purpose. These are payments from the firm to the executive that go directly into her retirement account, with no option for the CEO to obtain immediate cash instead. Often, these are structured as matches of employee voluntary contributions, so we expect these to look quite similar to DCET. And indeed, when we run similar regressions (reported in Table Five, Col. Four) in which corporate defined-contribution-plan contributions are the outcome variable, we again see a large and positive effect for tax-sensitive firms that pay in excess of \$1 million after 2017.

Overall, then, we find strong evidence that organizations exploited the deferred-compensation loophole in 162(m) prior to TCJA. Congress's supposed fix, however, did not close the loophole, but instead just moved it over a little.

The disparate effects of the TCJA on major compensation choices (none) and smaller choices (significant) are consistent with the outsized role of shareholder oversight and pressure. As discussed above, shareholder groups and their advisors are keenly sensitive to matters of pay-for-performance and overall pay.⁹⁶ Those same players, however, appear to offer no oversight or guidance with respect to elective deferrals. For example, ISS, the most significant proxy advisor, devotes a significant portion of its U.S. voting guidelines to the alignment of executive pay and firm performance and peer benchmarking with respect to overall pay.⁹⁷ It devotes not a word to elective deferral practices.⁹⁸ It is not surprising perhaps, then, that firms responded quickly to tax changes regarding the latter but not the former.⁹⁹

96. See *supra* note 57 and accompanying text.

97. See *id.*

98. *Id.*

99. See Kobi Kastiel & Noam Noked, *The 'Hidden' Tax Cost of Executive Compensation*, 70 STAN. L. REV. ONLINE 179, 184 (May 2018) (predicting that companies will not change compensation practices after TCJA because of the influence of proxy advisor firms).

Conclusion

For decades, scholars and policy makers have debated the import of tax rules, particularly the performance-based pay exception to Section 162(m), for the shape of executive compensation in the U.S. Using a novel empirical design, we find no evidence that the repeal of that exception changed the compensation features commonly believed to be the most material—the proportion of performance-based pay to total pay and the levels of total pay. This suggests that, at least in recent years, those pay decisions were overdetermined by factors beyond tax, e.g., increased transparency, shareholder pressure, path dependency, etc.

We cannot say with a great deal of confidence whether the performance-based pay exception to 162(m) was more consequential around its adoption in the mid-1990s, but our data suggests those who would put the rise in equity pay and overall pay levels at the feet of tax policy should be cautious in their interpretations. On the other hand, our evidence suggests that policy makers seeking to influence executive compensation in the future should be humble when projecting the influence they expect tax laws to exert over the most important compensation matters. To the extent future lawmakers wish to constrain compensation, they should be pessimistic about the impact of tax nudges.

When we move from headline compensation decisions to smaller bore ones, however, our data show that tax begins to have a more pronounced influence. With respect to elective deferrals by executives, for instance, small tax policy choices appear to matter. The distinguishing feature between the two types of compensation decisions—affected or not—seems to be the transparency and salience of those decisions to other constituencies. This suggests that tax incentives in the executive compensation arena may be consequential only when few people (other than tax advisors) are paying much attention.

Appendix A: Research Design

As described in the Article, our basic set-up is to compare the impact of TCJA at treated (relatively tax-sensitive) firms against control (relatively tax-insensitive) firms. Equation One summarizes this approach.

$$O_{it} = \alpha_0 + \beta_1 TCJA_{it} + \beta_2 TCJA_{it} * Taxpayer_{it} + \beta_3 CG_{it} + \beta_4 CombinedOrdinary_{it} + \beta_4 StateOrdinary_{it} + \beta_5 X_{it} + \beta_6 W_{it} + \beta_7 \omega_{it}^{1,2} * Partial_{it} + \varphi_t + \varepsilon_{it} \quad (1)$$

where for a given outcome O_{it} , $TCJA_{it}$ is the effect of the law change, $Taxpayer_{it}$ is an indicator for tax-sensitive firms, CG_{it} is our measure of the state-federal LTCG rate, $Ordinary_{it}$ is the executive's tax rate on ordinary income, X_{it} and W_{it} are vectors of firm (including two-digit SIC indicator) and executive controls, and $\omega_{it}^{1,2}$ is our control for the number of days of the contract year. φ_t is a year fixed effect and ε_{it} is the error term.

In order to test our predictions about the use of certain forms of compensation to game the computation of the § 162(m) cap, we additionally run some triple-difference estimates. In these specifications, we are still comparing tax-paying to non-taxpayer firms across the enactment of TCJA. We then interact with both of these an indicator for whether a given CEO's compensation would have been at or above the 2017 definition of the § 162(m) cap. In effect, we test whether firms whose non-incentive-based pay sums to less than \$1 million behave differently before and after TCJA, and allow this estimate to vary by whether the firm pays federal taxes.

Prior literature has imperfectly measured this threshold. For purposes of 162(m), "performance-based" pay should not include increments to stock incentive plans based on non-performance metrics, such as "time-vested" restricted stock that an executive can earn simply by remaining employed. Nor does it include most perquisites to the extent these would be taxable to the executive, such as free housing or private use of company aircraft. Thus, when we calculate the amount of compensation an executive receives that counts against the pre-TCJA cap, we include not only salary (as in De Simone et al. and Luna et al.), but also our estimate of the value of newly vested restricted stock, as well as "other" compensation from the Summary Compensation Table.

While we improve on earlier cap measures, ours too is a bit limited by Execucomp reporting. As we mentioned, the definition of "performance-based" pay excludes salary, but does not include salary voluntarily deferred by the executive through so-called "elective deferrals." Execucomp's reported salary figure does not reflect reductions for elective deferrals, and so we subtract executive deferrals from salary when using salary as an input into our cap calculations. "Other" compensation reported by Execucomp may be overinclusive to the extent it includes untaxed fringe benefits such as health insurance, but we believe these represent a small fraction of the "other" category. In theory, Execucomp's "bonus" category may include some payments that also were not qualified as incentive-based, such as purely discretionary bonuses. But our

understanding from professionals in the field is that nearly all bonuses of the pre-TCJA era were designed to allow them to be deductible, e.g., were based on objective performance criteria.

Equation Two, thus, summarizes our approach for the triple-difference estimates.

$$\begin{aligned}
 O_{it} = & \alpha_0 + \beta_1 TCJA_{it} + \beta_2 TCJA_{it} * Taxpayer_{it} + \beta_3 Capped_{it} + \\
 & \beta_4 TCJA_{it} * Capped_{it} + \beta_5 Taxpayer_{it} * Capped_{it} + \beta_6 TCJA_{it} * \\
 & Taxpayer_{it} * Capped_{it} + \beta_7 CG_{it} + \beta_8 CombinedOrdinary_{it} + \\
 & \beta_9 StateOrdinary_{it} + \beta_{10} X_{it} + \beta_{11} W_{it} + \beta_{12} \omega_{it}^{1,2} * Partial_{it} + \varphi_t + \varepsilon_{it} \quad (2)
 \end{aligned}$$

In this Equation, *Capped_{it}* is our indicator for whether reported compensation would have equaled or exceeded the 2017 cap on non-incentive-based pay. We include a complete set of partial interactions as well as the full interaction *TCJA_{it} * Taxpayer_{it} * Capped_{it}*.

Appendix B: Data Collection

We draw a panel of basic firm and executive data from Compustat, an on-line data warehouse for public company filings, for the period January 2010 through April of 2020. Because of their unique tax profile, we omit real estate investment trusts. We identify publicly-traded REITs using listings at REITnotes.com.

One of our key predictive variables is the tax rate facing each firm. As in many prior papers, we code a firm as having a zero marginal rate when it reports zero federal taxes paid in a given tax year.¹⁰⁰ As an economic matter, the marginal rate that is relevant for planning purposes may well be non-zero for firms with zero current taxes paid.¹⁰¹

For firm age, we rely on several additional sources. We have direct observations of firm founding dates from the compilation by Jay Ritter of firms that had their initial public offering between 1970 and 2019.¹⁰² For firms missing from this list, we define the firm's founding year as the first year it appears in The Center for Research in

100. Some prior research has instead relied on the presence of tax-loss carryforwards (also known as "NOLs," or net operating losses), which represent unused deductions from prior and current years. These are highly unreliable measures of the firm's marginal rate. For one, Compustat reports them inaccurately. Shane Heitzman & Rebecca Lester, Net Operating Loss Carryforwards and Corporate Financial Policies 1, 17-20 (Nov. 10, 2017) (unpublished manuscript) (<https://perma.cc/E8FL-6TN5>). More problematically, a firm often reports holding NOLs even though its marginal rate is the full statutory rate. Among other reasons, many firms are legally limited in their annual use of prior-year NOLs. *E.g.*, I.R.C. § 382. A large share of NOLs are also from non-U.S. jurisdictions or from states, Heitzman & Lester, *supra*, at 42 tbl.1, and thus do not directly impact federal tax rates.

101. For example, the firm may expect to be taxable at some point during the life of the project being planned. Also, prior to 2018, firms with excess losses could carry back excess deductions to prior years. SCHOLLES ET AL., *supra* note 87, at 352. In the case of firms with persistent tax minimization strategies, additional deferred deductions may have very small present value. *See id.* at 81 (noting that NOLs are rarely valuable at start-up firms many years away from profitability). At a minimum, it is the case that all else equal firms with zero tax paid in a given year have a lower average effective marginal rate over the life of their projects than firms that are current taxpayers.

In addition, there are good reasons to believe that firms with zero taxes paid behave as though they had a zero marginal rate. *See* John R. Graham et al., *Incentives for Tax Planning and Avoidance: Evidence from the Field*, 89 ACCT. REV. 991 (2014) (finding that fewer than one firm in six uses its true marginal rate for planning purposes and that many instead use their average rate as reflected on financial statements, the GAAP effective tax rate); Lily L. Batchelder, Accounting for Behavioral Considerations in Business Tax Reform: The Case of Expensing 16-22 (Jan. 24, 2017) (unpublished manuscript) (<https://perma.cc/Y3JF-RBU8>) (noting similar evidence with respect to firm decisions about capital investments); *see also* Qiping Xu & Eric Zwick, *Tax Policy & Abnormal Investment Behavior* 36 (Nat'l Bureau of Econ. Rsch., Working Paper No. 27363, 2020), <https://perma.cc/UMH6-MVVT> (reporting evidence that tax planning is most important to firms for liquidity reasons, so that in effect firms act as though future benefits are not very valuable). Firms face relatively little pressure to use better metrics because outside investors themselves generally use simple heuristics for the firm's marginal rate. Kathleen Powers et al., *Examining Which Tax Rates Investors Use for Equity Valuation* 18-21 (Apr. 2018) (unpublished manuscript) (<https://perma.cc/9VWL-HQ7V>).

102. Jay Ritter, IPO DATA, <https://perma.cc/DAU9-M5XX> (archived Nov. 8, 2020).

Security Prices stock-price data. Finally, in the event that Compustat provides data for an earlier year than either of these sources, we define the firm's first year as that year.

Turning to data on executives, we are obliged to make some approximations to connect data reported in Execucomp to tax outcomes. In particular, SEC reporting rules allow firms to report a combined value for two distinct instruments: performance shares and time-vested restricted stock (i.e., stock that is awarded automatically as long as the executive stays at the firm long enough). New stock awards promised to executives are included in the "stock awards_fv" variable, while awards of either kind that vest during the reporting periods are included in the (confusingly named) "stock awards" variable. As noted, time-vested restricted stock does not qualify as performance-based under old section 162(m). De Simone et al. appear to include all stock-based awards in their measure of performance pay,¹⁰³ even though time-vested restricted stock does not qualify. Similarly, Luna et al. elect not to include the value of time-vested stock that vests during the reporting year for purposes of determining whether an executive earned \$1m or more in incentive-based compensation,¹⁰⁴ even though these vested shares plainly did count against the \$1m cap.

We depart slightly from these earlier efforts by imputing a value for time-vested stock. Execucomp does separately report the firm-reported value of unvested shares of each of the categories (i.e., performance shares and time-vested restricted stock). Thus, in our main reported results we take the proportion of a given firm-year's unvested stock that is time-vested and assume that both new and vested awards in that year occur in this same proportion. We then include only the residual portion in our definition of "performance based." In computing whether a firm is at the pre-2018 162(m) cap, we include our imputed measure of time-vesting vested stock.

103. De Simone et al., *supra* note 21, at 11 n.8 ("Performance Pay includes all share awards....").

104. Luna et al., *supra* note 21, at 15-16.