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# The Effects of Voluntary Clawback Adoptions on Corporate Tax Policy

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# The Effect of Voluntary Clawback Adoptions on Corporate Tax Policy

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ABSTRACT
Companies are adopting executive compensation recoupment ("clawback") policies to discourage aggressive financial reporting choices. Recent research suggests clawback policies encourage other means of meeting earnings expectations. We suggest that reducing income tax expense is a means of meeting earnings expectations. We find that effective tax rates are lower after clawback adoption, due to increased investments in tax planning. We identify three tax planning activities that clawback companies invest in to lower effective tax rates: purchases of auditor-provided tax services, increased connections to other low-tax companies, and use of tax havens. We provide evidence that effective tax rates decreases do not result from use of opportunistic income tax accruals, and that decreases are stronger among companies that adopt robust clawback policies. Additional tests indicate lower tax outcome volatility and longer, more readable, tax footnotes following clawback adoption. Our results suggest a positive spillover effect of clawback adoption on corporate tax policy.

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**The Effect of Voluntary Clawback Adoptions on Corporate Tax Policy**

## INTRODUCTION

In recent years, executive compensation policies have garnered increased scrutiny from investors, policymakers, and the media. Section 954 of the Dodd-Frank Act of 2010 (DFA 954) calls for the Securities and Exchange Commission (SEC) to promulgate rules requiring all registrants to adopt an executive compensation "clawback" policy that allows for recoupment of compensation paid to executives based on misstated financial results. Clawback provisions thus discourage executives from making financial reporting decisions that could lead to restatements. Although the SEC has yet to finalize rules under DFA 954, many companies have voluntarily adopted clawback policies over the past several years.[1] This pattern provides an interesting setting to examine the effects of voluntary clawback adoptions on other corporate policies to gain insight into the potential effects of mandatory adoption.

In this study, we examine the effect of voluntary clawback adoptions on corporate tax policies that increase reported earnings. Recent research suggests that clawback adoptions could encourage executives to search for alternative means of meeting earnings expectations. We posit that one means of achieving earnings goals is reducing income tax expense. Corporate tax policy is a useful setting to examine the effects of clawback adoptions because income taxes are one of the largest expenses on the income statement and are highly visible to financial statement users.

Recent research on clawback adoptions identifies various financial reporting benefits, such as an increase in the value-relevance of earnings and a decrease in the frequency of restatements. Economic theory also suggests that clawback adoptions could have unanticipated spillover effects on other corporate policies (e.g., Ewert and Wagenhofer 2005; Fried 2016).

[1] The SEC proposed clawback rules on July 1, 2015 under Exchange Act Rule 10D-1, but the rules have not been finalized as of the date of this draft.

However, there is little research examining these spillover effects. Chan, Chen, Chen, and Yu (2015) find an increase in real earnings management and a corresponding decrease in accruals earnings management following clawback adoptions, which suggests that real earnings management is a substitute for accruals earnings management among clawback adopters. They also provide evidence that real earnings management "sacrifices long-term firm value" (p. 170) and conclude that their findings represent an unintended negative consequence of clawback adoptions.

Although accruals-based strategies for increasing earnings are less costly for executives absent a clawback provision, the potential costs of these strategies are higher in a clawback environment because aggressive accruals can attract regulatory scrutiny and lead to forefeited compensation. However, capital market pressures to meet earnings expectations do not subside following clawback adoption, and the findings from Chan et al. (2015) suggest that executives subject to clawback provisions search for alternative means of meeting earnings goals. We suggest that reducing income tax expense is an attractive alternative for achieving earnings expectations as the costs of using aggressive accruals rise. In this way, we complement Chan et al. (2015) by examining an unexplored spillover effect of clawback adoptions.

Extant research identifies two means of reducing income tax expense to increase earnings. First, prior research suggests that executives invest in tax planning with the goal of increasing earnings (Cook, Huston, and Omer (2008); Hanlon and Heitzman (2010); Armstrong, Blouin, and Larcker 2012; Graham, Hanlon, Shevlin, and Shroff 2014). Investments in tax planning can reduce income tax expense by improving efficiency in minimizing tax liabilities and can result in less volatile tax outcomes. Cook et al. (2008) suggest that tax-planning

investments could result in rapid and significant reductions in income tax expense providing a means for achieving earnings expectations.

Second, executives could manipulate income tax accruals to meet earnings expectations. Dhaliwal, Gleason, and Mills (2004) suggest that because the income tax accounts are among the last closed at the end of the fiscal year, income tax expense provides a last-chance opportunity for meeting earnings expectations.[2] However, opportunistic reporting decisions using tax accruals could attract regulatory scrutiny and generate restatements that are costly to executives. Importantly, given the increased direct costs of accruals, executives might reduce using income tax accruals to increase earnings following clawback adoption. Given these two options, the effect of clawback adoptions on corporate tax policies that increase earnings is an empirical question.



Because it is unclear how or if corporate tax policies will change following clawback adoptions ex ante, we first examine the association between clawback adoptions and subsequent GAAP effective tax rates (ETR), our proxy for changes in corporate tax policy affecting earnings. We then examine whether changes in ETR relate to changes in tax-planning investment or changes in income tax accruals. We conduct our primary analyses using a sample of 233 companies that voluntarily adopted clawback policies during fiscal years 2005-2011 and examine the effect of clawback adoptions on ETR using a difference-in-differences design.



Our analyses provide several insights into the effect of clawback adoptions on corporate tax policies. First, the mean ETR for adopting companies is statistically indistinguishable from the mean ETR for non-adopting companies before clawback adoption. After adoption, however, the ETRs of adopters decrease significantly while non-adopters' ETRs remain stable. Our

[2] Many related studies provide evidence that executives use income tax accounts to meet earnings expectations (e.g., Miller and Skinner 1998; Bauman, Bauman, and Halsey 2001; Krull 2004; Frank and Rego 2006; and Cazier et al. 2015).

multivariate results corroborate this decrease, suggesting that compared to non-adopters, adopters report ETRs that are on average 1.6 percentage points lower after clawback adoption. Using the mean of pre-tax income for our sample, this represents an $18 million decrease in income tax expense.

We also perform analyses to distinguish between tax planning and tax accruals as explanations for observed ETR decreases. We examine three activities adopting companies can use to increase their tax-planning investments.[3] First, we collect subsidiary locations from annual SEC 10-K filings (Exhibit 21) and provide evidence that companies are more likely to report a new material subsidiary in a tax haven country after clawback adoption. Second, we observe an increase in auditor-provided tax service (APTS) fees following clawback adoptions and a higher incidence of adopting companies purchasing APTS from an industry tax-expert audit firm. Finally, we observe a significant increase in connections to other U.S. companies with low ETRs, suggesting that clawback adopting companies increase access to information about ETR reduction strategies that appear successful. Overall, these analyses provide evidence on the tax-planning investments that clawback adopting companies use to increase earnings.

Next, we examine the change in accruals following clawback adoptions. Prior research and public commentary argue that clawback policies curb aggressive financial reporting decisions. Consistent with these arguments, we observe decreases in pre-tax accruals, tax-accruals, and tax-related misstatements after clawback adoptions. Additional analyses indicate ETR reductions are largest for clawback adopters that decreased accruals following adoption, consistent with the use of income tax expense as an alternative means of meeting earnings expectations. Collectively, these results provide additional evidence that decreases in income tax

[3] Because we cannot observe the tax policies adopted within these companies, we are careful to interpret the evidence as an increase in tax planning opportunities. We acknowledge that some companies could use these opportunities to varying degrees in addition to other opportunities that we cannot directly observe.

expense among clawback adopters relate to tax-planning investments rather than tax accruals.

Finally, we examine additional aspects of corporate tax policy changes surrounding clawback adoptions. First, we explore whether our results differ by clawback type. We follow Dehaan, Hodge, and Shevlin (2013) and partition our sample into sub-samples of clawback policies triggered by any restatement regardless of intent (robust clawbacks), and clawback policies triggered only by intentional misstatements (misconduct clawbacks). We observe more ETR reduction following a robust clawback adoption. Second, we observe reduced ETR volatility and increased readability and length of tax footnotes following clawback adoptions. Collectively, these results suggest that clawback companies' increased tax planning is more sustainable and not accompanied by opportunistic financial reporting decisions that could trigger a clawback.

Our study offers several contributions to the literature. First, we add to the literature on the effects of clawback adoptions, which is important because all public companies will soon be required to implement clawback policies. Recent research focuses on the success of clawback adoptions in curbing aggressive financial reporting choices, with little attention devoted to the spillover to other corporate policies. Chan et al. (2015) are the first to document an unintended negative consequence of clawback adoptions, providing evidence that companies substitute accruals earnings management with real earnings management following clawback adoption. We complement Chan et al. (2015) by providing evidence that clawback adoptions have a *positive* spillover effect on corporate tax policies. Although their study is similar in spirit to ours, Chan et al. (2015) note that real earnings management can result in short-lived benefits, because earnings increases are not sustainable. Conversely, we present evidence that additional tax-planning investments can benefit shareholders through overall improvements in tax outcomes and the

quality of tax-related financial statement information.

Second, we contribute to the financial reporting literature related to income taxes by providing evidence on the effect of tax-planning investments on reported income tax expense. Like Cook et al. (2008), we find that investments in tax planning are an important determinant of income tax expense, and therefore of earnings. Our study also offers insight on the use of income tax expense to meet earnings expectations when the costs of aggressive accruals-based strategies increase, as is the case after a clawback adoption, which raises the monetary cost associated with restatements. Our results suggest that when the costs of using accruals to achieve earnings targets increase, companies invest in earnings-increasing tax planning.

Third, we contribute to the tax risk and tax disclosure literatures. Recent studies suggest that lower effective tax rates may not imply greater tax risk (e.g., Guenther, Matsunaga, and Williams 2016) and that poor disclosure could lead to greater information asymmetry and regulatory costs (Balakrishnan, Blouin, and Guay 2018; Kubick. Lynch, Mayberry, and Omer 2016). We find that clawback companies exhibit lower post-adoption ETRs as well as lower tax outcome volatility and higher tax disclosure quality. These results suggest that decreased income tax expense is not the only benefit of tax-planning investments. Specifically, investments in tax planning appear to have a positive effect on the sustainability of tax outcomes, and the quality of tax-related financial statement information.



## BACKGROUND AND HYPOTHESIS DEVELOPMENT

### Clawback Policies

Section 304 of the Sarbanes-Oxley Act of 2002 (SOX 304) gave public companies statutory grounds on which to recover compensation paid to executives for misconduct leading to a financial restatement. The SEC enforces SOX 304, and it applies only to CEO and CFO

misconduct resulting in a restatement. Despite SOX 304's legislative intent, the SEC has successfully enforced SOX 304 in only a few cases involving egregious misconduct.

Under DFA 954, the SEC must develop rules requiring all public companies to adopt a clawback policy enforced by the Board of Directors that goes beyond SOX 304. The rules proposed by the SEC on July 1, 2015, mandate that the policies cover all incentive compensation paid to executives based on financial statements restated because of a material error, without regard to fault.[4] In January 2018, SEC Chairman Jay Clayton reiterated his commitment to finalizing all outstanding rules under Dodd-Frank, including rules related to clawback policies.[5] While awaiting further regulatory guidance, many companies have voluntarily initiated clawback policies and disclosed them in various corporate filings (Babenko, Bennett, Bizjak, and Coles 2017).

Recent studies examine the determinants and benefits of adopting clawback policies. Babenko et al. (2017) examine determinants and find that larger companies with greater profitability tend to adopt clawback policies and that prior executive malfeasance and corporate governance are predictors of voluntary clawback adoptions. Addy, Chu, and Yoder (2014) find that governance and network connections affect the probability of clawback adoptions. In examining benefits, Chan, Chen, Chen, and Yu (2012) and Dehaan et al. (2013) find that companies adopting clawback policies experience fewer subsequent restatements and higher earnings response coefficients. Chan, Chen, and Chen (2013) find a positive association between clawback adoptions and preferable terms in loan contracts. Iskandar-Datta and Jia (2013) examine shareholders' perceptions and find a positive stock market reaction to disclosures of voluntary clawback adoptions.

[4] The proposed rules are available at: http://www.sec.gov/rules/proposed/2015/33-9861.pdf.
[5] Chairman Clayton's remarks to the Securities Regulation Institute are available at: https://www.sec.gov/news/speech/speech-clayton-012218.

However, little research exists on whether clawback adoptions can influence other corporate policies, particularly those that affect earnings. Ewert and Wagenhofer (2005) suggest that regulations designed to improve financial reporting quality might encourage executives to seek alternative means of meeting earnings expectations. Chan et al. (2015) extend this intuition and find that companies substitute accruals earnings management with real earnings management following clawback adoption. They also document a negative association between real earnings management and future earnings and stock returns, which they note is consistent with the idea that real earnings management impairs long-run shareholder value.

Alternatively, Fried (2016) argues that in addition to reducing incentives for financial misreporting, clawback policies provide other economic benefits, including better alignment between executive and shareholder interests. Fried (2016) suggests that clawback adoptions encourage more efficient capital deployment and strengthen executives' incentives to invest in projects that maximize shareholder wealth. The notion that clawback adoptions result in broader benefits beyond reducing misstatements is also in line with top SEC official comments.[6]



**Hypothesis Development**

***Clawbacks and Reported Earnings***

With a clawback policy in place, executives have incentives to avoid regulatory scrutiny of their financial statements, because a restatement could result in forfeited compensation. Executives subject to clawback policies will likely avoid accruals-based earnings management because aggressive accruals can attract regulatory attention and lead to a restatement (Dechow, Ge, and Schrand 2010; Chan et al. 2015). However, capital market pressures to meet earnings

[6] Former SEC Chair Mary Jo White's public statement regarding Exchange Act Rule 10D-1 is available at: https://www.sec.gov/news/statement/listing-standards-for-clawing-back-erroneously-awarded-executive.html. Former SEC Commissioner Luis Aguilar's public statement regarding Exchange Act Rule 10D-1 is available at: https://www.sec.gov/news/statement/making-executive-compensation-more-accountable-.html.

expectations do not subside after clawback adoption, and recent research suggests that executives subject to clawback policies seek alternatives to aggressive accruals for meeting earnings expectations.

Chan et al. (2015) provide evidence that executives substitute real earnings management for aggressive accruals after clawback adoptions. They note that real earnings management involves deviations from optimal operating decisions. Their finding of a negative association between real earnings management and future performance is consistent with the notion that real earnings management decreases companies' long-run value. Overall, their results suggest an unintended consequence of clawback adoptions that is detrimental to shareholder value.

We propose that income tax expense is an alternative means of meeting earnings expectations following clawback adoptions. While accruals-based earnings management involves opportunistic reporting decisions, management can reduce income tax expense using justifiable operating decisions. Furthermore, because income tax expense is one of the largest expense items on the income statement, reducing it can lead to material increases in earnings.

***Income Tax Expense and Reported Earnings***

Extant research suggests two means of using income tax expense to increase earnings: tax accruals and tax planning. Dhaliwal et al. (2004) suggest that income tax expense is an ideal context for earnings management, and they document an association between earnings management incentives and reductions in ETR from the third to fourth quarter. Phillips, Pincus, and Rego (2003) find that deferred tax expense is useful in detecting earnings management, supporting the notion that tax accruals are part of companies' earnings management strategies. Subsequent research focuses on the use of specific tax accounts or strategies for earnings

management, such as the deferred tax asset valuation allowance (e.g., Cazier, Rego, Tian, and Wilson 2015), or designating foreign earnings as permanently reinvested (e.g., Krull 2004).

Hanlon and Heitzman (2010) argue that executives can invest in tax planning to increase reported accounting earnings. These investments are likely to lead to earnings benefits from reduced income tax expense, and cash flow benefits from cash tax savings. Using APTS fees as a proxy for investments in tax planning, Cook et al. (2008) advance the methodology in Dhaliwal et al. (2004), and find that tax-planning investments explain a substantial portion of third to fourth quarter ETR changes. Their results suggest that companies use a combination of investments in tax planning and tax accruals to meet earnings expectations.

Other studies provide supporting evidence that executives have incentives to pursue tax planning that decreases income tax expense and increases earnings. Armstrong et al. (2012) find that tax directors' incentives are associated with GAAP ETRs (which have a direct link to earnings) but not associated with other tax metrics. Similarly, Graham et al. (2014) survey 455 tax executives at U.S. public companies and report that 84 percent of companies are concerned at least as much about income tax expense as cash taxes and that 57 percent of public companies indicate that increasing earnings per share is an important outcome from tax planning.



***Clawback Adoptions and Tax Policy***

Extant literature suggests that executives use tax planning and tax accruals to increase earnings; however, both means of reducing income tax expense involve costs that could discourage executives from using them to increase earnings following clawback adoption. First, managing tax accruals is a form of accruals-based earnings management, a less likely approach to meeting earnings expectations after clawback adoption given the increased costs to executives.

Companies using tax accruals to increase earnings before clawback adoption will likely reduce the use of these strategies after clawback adoption, which could increase income tax expense.

Second, executives might not invest in additional tax planning post-clawback adoption if the investments are too costly, if there are limited tax planning opportunities, or if other investments offer better returns (McGuire, Omer, and Wilde. 2014).[7] Prior literature also suggests that companies mimic the tax outcomes of industry competitors and when companies exhibit behavior that differs from their industry peers, there are potential costs from additional regulatory scrutiny (Kubick et al. 2016) and increased cost of capital (Cook, Moser, and Omer 2017). Given concerns about what changes in ETR might mean for parties outside the company, and the option to use real earnings management, it is not clear that ETR will change after clawback adoption.

We summarize the possible effects of clawback adoptions on ETR as follows. A higher post-adoption ETR might occur if clawback policies encourage executives to decrease tax accrual management without a corresponding increase in tax planning. There might be no discernible change in ETR if executives replace tax accrual management with tax planning. Finally, a lower post-adoption ETR might occur if executives primarily increase tax-planning investments to lower income tax expense. Thus, we state the first hypothesis in the null:

**H1:** Clawback adoptions do not affect subsequent effective tax rates.

***Tax-planning investments versus Tax Accrual Management***

Changes in tax-planning investments, tax accruals, or a combination of both could underlie changes in ETR after clawback adoptions. We, therefore, examine two additional research questions to identify the mechanism by which clawback adoptions affect ETRs.

[7] For example, companies with limited foreign operations might be unable to pursue tax planning strategies involving inter-jurisdictional income shifting. In untabulated tests described in section IV we find that the association between clawback adoption and lower ETRs is stronger among adopters with more foreign income.

Although both tax planning and tax accruals can reduce income tax expense, both involve costs that could discourage executives from using them as a means of meeting earnings expectations. Tax-planning investments involve direct costs in the form of expenditures that are observable by shareholders, and they could produce uncertain future benefits. On the other hand, the use of opportunistic tax accruals is a form of accruals-based earnings management that can attract regulatory scrutiny and lead to restatements. Importantly, adoption of a clawback policy could change executives' expectations about the relative costs and benefits of the two means of reducing income tax expense, because clawback adoptions raise the direct cost of accruals-based strategies to executives. Thus, executives could perceive the costs of tax-planning investments to be less than the potential costs of compensation forfeiture in the presence of a clawback provision.

Because this is an empirical question, we explore two research questions to identify the mechanisms underlying the observed changes in ETR:

**RQ1a:** Do tax-planning investments change following clawback adoptions?

**RQ1b:** Do tax accruals change following clawback adoptions?

## METHODOLOGY

### Sample

We derive our sample from the intersection of the Audit Analytics, BoardEx, Compustat, CRSP, and ExecuComp databases. We obtain clawback data from the Incentive Lab database, which tracks clawback adoptions from corporate filings through 2012.[8] We begin our sample of adoptions in 2005 because companies began voluntarily adopting clawback policies shortly after the passage of the Sarbanes-Oxley Act, and most clawback adoptions occurred in years leading up to the passage of the Dodd-Frank Act of 2010. We omit companies in the financial services

[8] Most of the calendar year 2012 adoptions pertain to fiscal year 2011.

(SIC codes 6000-6999) and utilities (SIC codes 4900-4999) industries because of fundamental differences in company structure and regulatory environment. Consistent with prior tax research, we eliminate companies with negative pre-tax income, income tax expense, or cash taxes paid because these companies are in different tax positions than other companies.

Table 1, Panel A, broadly describes the sample selection procedures for the sample of 2,635 company-year observations (977 unique companies), which we use to estimate our first-stage model explaining the adoption of a clawback policy. Table 2, which we discuss in detail later, reports the composition of our matched sample, including fiscal year and industry distributions. Not surprisingly, we observe a sharp increase in the number of clawback adoptions surrounding the passage of the Dodd-Frank Act of 2010. The industry distribution (based on two-digit SIC) suggests adequate representation across industries.



**Clawback Adoptions**

We obtain data on clawback adoptions from Incentive Lab, which tracks corporate filings for variations of the following words disclosed in proxy statements, and 8-K and 10-K disclosures: "clawback," "compensation," "recoup," and "recover." These simple keywords capture more complex descriptions such as "executive compensation recovery policy," "recoupment of executive compensation," and "compensation clawback provision."[9,10]



**Effective Tax Rates**

We follow related tax literature and focus our analysis on the book effective tax rate (*ETR*) because reductions in *ETR* increase earnings. *ETR* is total income tax expense divided by pre-tax income (Compustat TXT/PI). *ETR* represents tax activities that generate permanent book-

[9] See Babenko et al. (2017) for additional details and examples of clawback adoption disclosures.
[10] We searched over 9,000 corporate filings using the same keywords as Incentive Lab and found no evidence of companies voluntarily removing a clawback policy. Thus, we are confident that clawback policies, once adopted, are a permanent fixture in compensation contracting.

tax differences (i.e., lowering taxable income compared to book income). It is also a highly visible measure of tax planning (Armstrong et al. 2012; Graham et al. 2014). *ETR* is appropriate in our setting because it has a direct effect on earnings.[11]

**Empirical Design**

We follow related literature and test our hypothesis using propensity score matching and a difference-in-differences design. Because we are interested in the effect of clawback adoptions on adopters' ETRs, we examine ETRs before and after clawback adoptions using a propensity score matched control sample of non-adopting companies with similar characteristics. This process involves two steps. First, we use the following logistic regression model to predict the adoption of a clawback policy (we omit company and time subscripts for brevity):

$$\begin{aligned} CLAW\ ADOPT = {} & \alpha + \gamma_1 PAST\ RESTATE + \gamma_2 PAST\ LAWSUIT + \gamma_3 SIZE + \gamma_4 STOCK\ VOL + \\ & \gamma_5 R\&D + \gamma_6 SEGMENTS + \gamma_7 PROFITABILITY + \gamma_8 STOCK\ RET + \gamma_9 LEV + \\ & \gamma_{10} TOBINS\ Q + \gamma_{11} ENFORCE\ INDEX + \gamma_{12} EARN\ VOL + \gamma_{13} BOARD\ SIZE + \\ & \gamma_{14} PCT\ IND + \gamma_{15} PCT\ BUSY\ IND + \gamma_{16} CEO\ CHAIR + \gamma_{17} NUM\ FIN\ EXPERTS + \\ & \gamma_{18} CLAW\ INTERLOCK + \gamma_{19} LOGCASHCOMP + \gamma_{20} LOGDELTA + \\ & \gamma_{21} LOGVEGA + \mu \end{aligned} \quad (1)$$

*CLAW ADOPT* is one if the company adopted a clawback policy during the fiscal year and zero if the company never adopted a clawback policy.

Control variables, all lagged one fiscal year, are motivated by Babenko et al. (2017), Addy et al. (2014), and Denis (2012). Specifically, *PAST RESTATE* and *PAST LAWSUIT* are one if the company reported a restatement or was a defendant in any lawsuit, respectively, during the previous three fiscal years, and zero otherwise. *SIZE* is the natural logarithm of lagged total assets. *STOCK VOL* is the annualized standard deviation of daily stock returns computed over the previous fiscal year. *R&D* is prior year total research and development expense divided by

[11] *ETR* is a widely-used proxy in the tax literature (Hanlon and Heitzman 2010) and, given its link to earnings, we believe it is most suitable for our specific research setting. Nevertheless, as we report later in the paper, our results are robust to using alternative tax measures based on book-tax differences or cash taxes paid.

lagged total assets. *SEGMENTS* is the number of business segments reported in the previous fiscal year. *PROFITABILITY* is earnings before interest, taxes, depreciation, and amortization ("EBITDA") for the previous fiscal year divided by lagged total assets. *STOCK RET* is the annual stock return during the previous fiscal year. *LEV* is long-term debt for the previous fiscal year divided by lagged assets. *TOBINS Q* is book value of total debt plus market capitalization, divided by total assets, using values reported in the previous fiscal year. *ENFORCE INDEX* is the non-competition enforceability index of Garmaise (2011). *EARN VOL* is the standard deviation of quarterly pre-tax income over the previous eight quarters.

We include several board-related governance characteristics, recognizing that governance can affect clawback adoptions (Addy et al. 2014; Babenko et al. 2017). Adding board-related governance characteristics also addresses the possibility that the decision to adopt a clawback policy is part of a broader reform of the company's governance structure (Denis 2012). To this end, we include the following board-related characteristics. *BOARD SIZE* is the number of directors serving on the board during the previous fiscal year. *PCT IND* is the percentage of directors classified as independent (i.e., no employment relationship with the company). *PCT BUSY IND* is the percentage of independent directors who serve on more than two (public or private) boards. *CEO CHAIR* equals one if the CEO is also the chairman of the board, and zero otherwise. *NUM FIN EXPERTS* is the number of board members classified as financial experts. *CLAW INTERLOCK* is one if a director also serves on the board of another company that has a clawback policy in place, and zero otherwise. Finally, we include various components of executive compensation recognizing that clawback adoptions can change the form of executive compensation (Babenko et al. 2017), which can affect tax planning (Rego and Wilson 2012). *LOGCASHCOMP* is the natural logarithm of the CEO's cash-based (salary and bonus)

compensation. *LOGDELTA* is the natural logarithm of the CEO's stock and option-based compensation sensitivity to a 1 percent increase in stock price. *LOGVEGA* is the natural logarithm of the CEO's option-based compensation sensitivity to a 0.01 unit increase in underlying stock volatility. *LOGDELTA* and *LOGVEGA* are common measures of equity incentives (e.g., Coles, Daniel, and Naveen 2006; Brockman, Martin, and Unlu 2010; Armstrong, Larcker, Ormazabal, and Taylor 2013) and are computed using the "one-year approximation" method outlined in Core and Guay (2002).[12]

We estimate Equation (1) and form matched pairs, without replacement, within an industry (two-digit SIC) and fiscal year using propensity scores. We match each clawback adopting company to a non-adopting company in the same industry and fiscal year with the closest predicted probability of clawback adoption. This approach identifies non-adopters that appear similar to adopters on observable characteristics associated with clawback adoptions, thereby providing us with an empirically credible counterfactual (Guo and Fraser 2015).[13]

The second stage of our analysis examines subsequent ETRs for companies adopting clawback policies compared to companies not adopting clawback policies, using the following ordinary least squares (OLS) difference-in-differences regression, estimated with and without company fixed effects (we omit company and time subscripts for brevity):

$$ETR = \alpha + \beta_0 CLAWBACK + \beta_1 POST + \beta_2 CLAWBACK \times POST + Controls + Fixed\ Effects + \varepsilon \quad (2)$$

*CLAWBACK* is one if a company adopts a clawback policy during our sample period, and controls for general differences in *ETR* between adopters and non-adopters. *POST* is one for all

[12] Because the CEO has the most influence over corporate policies, we follow a large stream of literature and use the compensation of the CEO in our main tests. In untabulated tests, our results are unchanged if we consider the compensation of the entire top management team. Our results are also unchanged if we control for the size of the CEO's pension and deferred compensation (which is only available for fiscal years after 2005).

[13] We recognize that propensity score matching controls for observable characteristics. Thus, our results could be sensitive to unobservable covariates. As we discuss later, we conduct a Rosenbaum (2002, 2007) sensitivity test of that possibility in additional analyses, and we examine covariate balance using entropy balancing.

years after clawback adoptions for treatment and control companies. Our independent variable of interest, *CLAWBACK×POST*, represents the marginal effect of clawback adoptions on *ETR*.[14]

We include control variables to isolate the effect of clawback adoptions on *ETR*. We include return on assets (*ROA*), to control for differences in tax outcomes related to profitability (Gupta and Newberry 1997; Rego 2003). Performance-matched pre-tax discretionary accruals, *ACC*, is included to control for the association between accruals earnings management and tax outcomes (Frank, Lynch, and Rego 2009).[15] *RTM* is included to control for the increased relevance of real earnings management following clawback adoptions (Chan et al. 2015). *RTM* is the sum of abnormal discretionary expenses and abnormal cash flows from operations (Roychowdhury 2006).[16] *SIZE* is the natural logarithm of total assets at the beginning of the year, and controls for differences in tax outcomes attributable to company size (Stickney and McGee 1982; Gupta and Newberry 1997; Mills, Erickson, and Maydew 1998). We include an indicator variable, *FI*, which is one if the company reports positive pre-tax foreign income, to control for tax outcomes associated with foreign earnings in low-tax jurisdictions (Rego 2003; Dyreng and Lindsey 2009).

Consistent with Chen, Chen, Cheng, and Shevlin (2010), we control for variation in tax rates related to the following: equity in earnings (*EQINC*), intangibles (*INTAN*), net property, plant and equipment (*PPE*), the existence and use of net operating losses (*NOL* and Δ*NOL*),

[14] Because this is a staggered-event panel (i.e., companies adopt clawback policies in different years), there could be fewer (more) pre-adoption (post-adoption) years for companies that adopt earlier in the sample period. In untabulated tests, we standardize the event window to be four years before and four years after the clawback adoption and find our results hold. Further, because *POST* turns on after each adoption (for both the treatment company and matched control company), and the timing of adoptions vary by company, we can include year fixed effects in our second stage regression. We confirm that the estimates from our main tests are consistent if we omit year fixed effects in the second stage or if we remove the overlap between *POST* and the year fixed effects.

[15] We specifically follow Frank et al. (2009, 479) and compute performance-matched pre-tax discretionary accruals by industry (two-digit SIC) and fiscal year, requiring at least 10 observations for each industry-year group.

[16] Chan et al. (2015) also use the sum of abnormal discretionary expenses and abnormal production expenses. Our results are robust to controlling for either measure of *RTM*.

market-to-book value of equity (*MTB*), and debt usage (*LEV*). We include free cash flow (*FCF*), scaled by lagged assets because Dhaliwal, Huang, and Moser (2011) find a positive association between excess cash holdings and tax avoidance. We include research and development expense (*R&D*), scaled by lagged assets, to control for tax benefits attributable to R&D. We also include governance and compensation-related variables from Equation (1) to control for the possibility that contemporaneous changes in governance or compensation, before or after clawback adoptions, could affect *ETR*. Finally, we include year and industry (two-digit SIC) fixed effects in the baseline regression, and cluster standard errors by company (Petersen 2009; Gow, Ormazabal, and Taylor 2010).



## EMPIRICAL RESULTS

### Descriptive Statistics

Table 1, Panel B, reports descriptive statistics for the variables used to estimate our first stage logistic regression. The mean *ETR* for our first-stage sample is 0.328, which is near the top statutory tax rate of 0.35 during our sample period and consistent with prior tax research. The mean of *CLAW_ADOPT* (0.11) suggests that approximately 11 percent (or 290) of the 2,635 company-year observations used to estimate our first-stage model were company-years with clawback adoptions. Because companies adopt a clawback policy only once during our sample period, this indicates that 290 (approximately thirty percent) of the 977 unique companies in our sample adopted a clawback policy during our sample period.



### Determinants of Clawback Adoptions

Table 1, Panel C, reports results from estimating Equation (1). Results suggest that larger companies (*SIZE*), companies with less leverage (*LEV*), greater board independence (*PCT IND*), more financial experts (*NUM FIN EXPERTS*), and companies that have director interlocks with

other clawback companies (*CLAW INTERLOCK*) are more likely to adopt a clawback policy. These patterns are broadly consistent with the results reported in Babenko et al. (2017) and Addy et al. (2014).

The model has an acceptable discriminant ability with an area under the ROC curve of 0.76. Our model classification accuracy is over 89 percent, and the Hosmer-Lemeshow goodness of fit statistic indicates a good model fit. The model performs well without year and industry fixed effects, which we omit because we exact match companies within each year and industry. Next, we evaluate the covariate balance of our matched sample.

**Covariate Balance**

Table 2 Panel B reports the covariate balance of our matched sample of 233 treatment and control companies. Although our full sample includes 290 clawback adopters, our matched sample of 233 adopters reflects the fact that we are unable to identify a match with all requisite data for the second-stage within some two-digit SIC and fiscal year groups.[17] We note the same number of treatment and control companies for each fiscal year and industry, reflecting an exact match on these dimensions.

Our covariate balance is good, with a few exceptions.[18] Treatment and control companies are balanced on *ETR* for the fiscal year before clawback adoption (*p*-value = 0.823). This result suggests that clawback companies do not systematically have lower *ETR* before clawback

[17] A small proportion of non-adopters are missing data for *RTM*, a control variable used in the second-stage that is not included in the first-stage. Because *RTM* is an important control variable in our setting, we require that each eligible control company have requisite data for *RTM* for the second-stage regression model. However, our results are robust to removing *RTM* or setting missing values to zero, which results in 250 treatment companies in the second-stage regression. Our results are also robust to matching within broader one-digit SIC and year groups, which results in a sample of 263 matched pairs (or 91 percent of the adopters in the first-stage sample).

[18] Matching on many dimensions can produce a tradeoff between power (more matched pairs) and precision (stringency of the match). To preserve sample size we include these first-stage variables in the second-stage regressions to control for any residual imbalance.

adoption, which serves as an important validity check for the treatment effect estimated in our second-stage model (Roberts and Whited 2013).

In untabulated robustness tests, we use entropy balancing to balance our covariates on higher moments of the distribution (variance and skewness) as well as the mean. We confirm our main results are consistent when using entropy balancing on our covariates using both the variance and skewness in addition to the mean of each covariate. This more restrictive design choice provides further assurance that our findings are not the result of residual imbalance following our matching process. Next, we turn our attention to our second-stage results.

**Graphical Depiction**

Figure 1 presents a graphical depiction of mean *ETR* before and after clawback adoptions and indicates a decrease in average *ETR* among clawback adopting (treatment) companies, compared to non-adopting (control) companies. Below the figure is a tabular description of the differences between treatment and control companies. Specifically, the mean *ETR* before adoption (year *t*-1) is 0.319 for adopting companies whereas the mean *ETR* of control companies is 0.321. The mean *ETR* of treated companies is 0.302 in the year of adoption, while the mean *ETR* for control companies is 0.320, and this difference is significant ($p$-value < 0.05). The mean *ETR* in the following year (*t*+1) is 0.300 for adopting companies and 0.311 for control companies, and this difference is also significant ($p$-value < 0.10). This pattern indicates an economically significant reduction in *ETR* following clawback adoption and leads us to reject the null hypothesis of no effect on corporate tax policy from clawback adoption.

**Difference-in-Differences Regressions**

Table 3 reports results from estimating Equation (2). Panel A reports summary statistics for our second-stage regression sample of 3,511 company-year observations from 402 unique

companies (233 clawback adopters and 169 control companies).[19] Although we match without replacement within each industry and fiscal year, we note a smaller subsample of 169 control companies, because some control companies match with different treatment companies in different years.[20] The mean *ETR* is 0.315, consistent with the mean *ETR* for the first-stage sample used to estimate the determinants of clawback adoption and with prior tax research. The means of most control variables are also consistent with prior tax research. We report mean pre-tax income and lagged total assets to aid in interpreting economic magnitudes.

Panel B of Table 3 reports our second-stage regression results.[21] Results indicate a decrease in *ETR* following clawback adoption. We observe a negative and significant coefficient on *CLAWBACK*×*POST* when including fiscal year and industry fixed effects (Column 1: -0.016, *p*-value < 0.05), and when including fiscal year and company fixed effects (Column 2: -0.017, *p*-value < 0.01).[22] A coefficient estimate of -0.016 suggests that companies on average have effective tax rates almost 1.6 percentage points lower after adopting a clawback policy, which roughly translates to an $18 million lower income tax expense (mean pre-tax book income from Panel A is $1.1 billion). We observe a similar coefficient estimate of -0.017 when we include company fixed effects instead of clustering by company.



[19] The two final sample cuts listed in Table 1 Panel A apply only to the first-stage model predicting clawback adoption. Further, we estimate our second-stage regression over years 2004-2012 to ensure that we have pre-adoption and post-adoption observations for each company. As such, we have more observations available for our second-stage regression, despite the fact that the second-stage sample includes observations for fewer companies.
[20] This occurs for approximately 27 percent of matches, resulting in repeated observations for control companies within our sample. The use of repeated control companies in propensity score matching is common in prior clawback research. For example, Dehaan et al. (2013) note that approximately 20 percent of the control companies in their sample are repeats. We follow their approach and cluster standard errors by firm to mitigate any potential bias induced by the use of repeated control firms.
[21] We note a small difference in observations between treatment and control companies due to missing data for some variables in different years. In untabulated tests, we repeat the matching process using only company-years with available data for both treatment and control companies, and we observe consistent results in this balanced sample.
[22] In further tests, we consider several additional controls including material weaknesses, recent auditor dismissals and resignations, audit firm size, corporate restructuring (none of our sample companies experienced a merger or acquisition), and recent CEO and CFO turnover, and our results continue to hold.

Columns 3 and 4 report regressions for adopters and non-adopters, respectively. In these subsamples, the coefficient on *POST* captures the within-company change in *ETR* following clawback adoption. Results indicate that only clawback adopters experience a decrease in *ETR* following clawback adoption (Column 3: -0.016, *p*-value < 0.01), confirming the patterns observed in Figure 1. Overall, we again reject our hypothesis of no effect of clawback adoption on corporate tax policy.[23]

To assess when subsequent ETRs decreased for clawback adopters, we augment the regression model and replace *POST* with four additional variables: *YEAR_BEFORE_ADOPT*, *YEAR_ADOPT*, *YEAR_AFTER_ADOPT*, *TWOYEARS+_AFTER_ADOPT*. These dichotomous variables equal one for the fiscal year before adoption, year of adoption, year after adoption, and two years after adoption and onward, respectively, and zero otherwise. This augmented specification provides additional insight about the timing and persistence of the treatment effect. In untabulated tests, we observe an insignificant coefficient on *YEAR_BEFORE_ADOPT*, as expected because the treatment has not occurred.[24] In contrast, we observe negative and significant coefficients on *YEAR _ADOPT, YEAR_AFTER_ADOPT,* and *TWOYEARS+_AFTER_ADOPT* (*p*-value < 0.05). The relatively swift effect on *ETR* is consistent with Cook et al. (2008) who find that companies can make significant tax planning changes

[23] Because propensity score matching relies on the inclusion of all relevant observable dimensions, we assess the extent to which our matching approach is sensitive to correlated omitted variables (i.e., hidden bias) using the bounding approach of Rosenbaum (2002; 2007). In this test, we examine the extent to which our results hold for different relative probabilities of clawback adoption. In other words, despite the matched sample being observationally similar on observable covariates, hidden bias could exist if companies in the treatment group have an inherently different probability of adopting a clawback policy than companies in the control group. Thus, this test provides a measure of how large the unobservable characteristics would have to be to invalidate our results. Using this approach, we find that our results hold at the median if a company is 63 percent more likely to be classified as a treatment company because of an unobserved covariate.

[24] We also re-estimate our difference-in-differences regression requiring *POST* to turn on during years before clawback adoption. We find an insignificant effect on *ETR* following these 'pseudo-events', thereby providing an important validity check on our difference-in-differences design (Roberts and Whited 2013).

during the third and fourth quarter.[25] Importantly, we observe slightly attenuated but persistently negative coefficients for years after adoption, which confirms the treatment effect has a persistent effect that extends beyond the adoption year. Next, we address our research questions by examining whether the observed changes in *ETR* relate to tax-planning investments, tax accruals or some combination.

**Tax-Planning Investments**

Given that, compared to non-adopters, companies report lower ETRs after adopting a clawback policy, we next examine our first of two research questions about the mechanisms that underlie the observed changes in ETRs. We focus attention specifically on clawback adopters.[26] We consider three possible tax-planning investments that can lower ETRs: tax haven use, investments in APTS, and connections to other low-tax companies. Having observed that ETR decreases following clawback adoption, we examine whether these tax-planning investments increase following adoption using one-tailed tests. We recognize that companies can use some or all of these investments. Hence, we view our results here as descriptive, but not definitive, evidence of changes in tax planning among clawback companies.

Table 4, Column 1, reports results from estimating a regression with an indicator variable representing new subsidiaries located in tax haven countries (*TAX HAVEN*) as the dependent variable, and the explanatory variables from Equation (2), with the exception of year fixed effects, which we exclude for all within-adopters tests. We obtain data on subsidiary locations from Exhibit 21 of the company's 10-K and define *TAX HAVEN* as one if there is at least one

[25] Similarly, Hoopes, Mescall, and Pittman (2012) survey tax executives and report that changes in tax planning occur over relatively short periods.

[26] For internal consistency, we use the sample of clawback adopters from the second-stage PSM regressions (i.e., 233 treatment companies over 1,776 company-years) for our within-adopters tests. However, in untabulated tests, we confirm our results hold (with the exception of the test of new tax haven subsidiaries) if we relax the explicit requirement of being in the PSM sample, thereby allowing us to generalize beyond the heavy restrictions imposed by the PSM design.

material subsidiary located in a tax haven country reported in the 10-K filing in fiscal year *t*, but no tax haven subsidiaries in fiscal years *t*-3 through *t*-1.[27] *AFTER CLAWBACK* is assigned one following the adoption of a clawback policy, and zero otherwise. Results provide evidence of an increase in tax haven subsidiaries following clawback adoption. The positive coefficient on *AFTER CLAWBACK* suggests that clawback adopters are more likely to report a new material subsidiary in a tax haven country following adoption (Column 1: 0.010, *p*-value < 0.10).

We use two variables to represent the extent to which clawback companies increase investments in APTS. Our first dependent variable, *TAX EXPERT*, is one if the company purchases APTS from an industry tax-expert audit firm in the following year, and zero otherwise. We follow McGuire, Omer, and Wang (2012) in defining industry tax experts. Our second dependent variable, *LOGTAXFEES*, is the natural logarithm of reported tax fees paid to auditors in the following year, which represents the level of APTS after clawback adoption. Results in Columns 2 and 3 of Table 4 suggest that companies increase investments in APTS following clawback adoption. The coefficients on *AFTER CLAWBACK* are positive and significant (Column 2: 0.060, *p*-value < 0.05) (Column 3: 0.245, *p*-value < 0.05).[28] In untabulated tests, we confirm our results hold if we use company fixed effects instead of clustering by company.

Finally, we examine regressions with company connections to other low-tax companies (*LOW TAX TIES*) as the dependent variable. Brown and Drake (2014) argue that information about tax strategies and tax saving opportunities spread through company connections. Thus, we view this information medium as an avenue by which clawback companies become aware of tax planning opportunities that can lower their ETRs. For each fiscal year, we follow Brown and

[27] For each fiscal year filing, we count the number of material subsidiaries located in tax haven countries using the Dyreng and Lindsey (2009) definition of tax havens.
[28] Differences in observations across the different columns in Tables 4 and 8 relate to data availability for the different dependent variables.

Drake (2014) and obtain the percentage of company connections to other companies that have low ETRs. Results suggest that clawback adopters increase their connections to low-tax companies following clawback adoption (Column 4: 0.055, $p$-value < 0.01). This result is also significant with company fixed effects (untabulated). Collectively, we interpret the evidence in this section as informative about tax-planning investments that lower ETRs.

In untabulated tests, we also consider whether access to tax planning opportunities impacts the association between clawback adoption and ETRs. We consider the role of inter-jurisdictional tax planning because many common tax planning strategies involve the use of foreign operations or subsidiaries. We find that our results are strongest among clawback adopters with above-median foreign income, consistent with access to tax planning opportunities moderating the effect of clawback adoption on *ETR*.

**Tax Accruals**

To investigate our second research question, we examine the level of tax and non-tax accruals after clawback adoption. We estimate regressions with pre-tax accruals (*ACCRUALS*) or tax-related accruals (*TAX ACCRUALS*) as the dependent variable. *ACCRUALS* is the absolute magnitude of pre-tax discretionary accruals, estimated by industry and fiscal year, following Frank et al. (2009).[29] *TAX ACCRUALS* is the magnitude of tax accruals, computed as the absolute value of the difference between income tax expense and cash taxes paid, scaled by lagged assets following Choudhary, Koester, and Shevlin (2016). Larger values of *TAX ACCRUALS* indicate more tax accruals. We also examine the likelihood of future tax-related misstatements following clawback adoption, using the variable *TAX MISSTATE*, which we set

[29] Because we only consider treatment companies, we do not use the performance-matching approach of Kothari, Leone, and Wasley (2005) for these accrual measures, as Keung and Shih (2014) warn this can bias the regression coefficients toward zero when there is no treatment and control group. However, we observe similar results using performance-matched accruals.

equal to one if the company experiences a tax-related misstatement in a future fiscal year, and zero otherwise.

Results, reported in Table 5, indicate a smaller magnitude of pre-tax accruals following clawback adoption (Column 1: -0.009, *p*-value < 0.01). We observe a similar pattern for tax-related accruals (Column 2: -0.001, *p*-value < 0.10). We also find clawback adopting companies have a significantly lower likelihood of future tax-related misstatements (Column 3: -0.036, *p*-value < 0.01). Overall, these results suggest that clawback companies decrease accruals management (including tax-related accruals) and are less likely to experience tax-related misstatements following the adoption of a clawback policy.[30]

We also examine whether the observed results relate to companies' use of accruals to meet earnings expectations before clawback adoption. We suggest that companies with higher pre-adoption accruals had more incentive to decrease their reported income tax expense given the increased cost of accruals-based strategies after clawback adoption. In other words, for this subset of companies, the association between investments in tax planning and *ETR* should be stronger. Table 6, Column 1, reports regression results examining the post-adoption change in *ETR* for companies that decreased accruals after clawback adoption. Column 2 reports regression results for companies that did not decrease accruals. Results indicate *ETR* change following clawback adoption is greater for adopting companies that decreased accruals following clawback adoption (Column 1: -0.023, *p*-value < 0.01 vs. Column 2: -0.008, *p*-value = 0.170). An untabulated Welch test confirms that the differences in coefficients across these regressions are

[30] In untabulated tests, we also examine the change in FIN 48 reserve for uncertain tax positions and find that the reserve for uncertain tax positions (including the reserve that, if recorded, would impact the ETR) does not change after clawback adoption. This test confirms that changes in reporting decisions of the FIN 48 tax reserve are not affecting our results.

significant ($p$-value < 0.05). These results support the notion that decreases in ETRs following clawback adoption relate to a substitution of tax-planning investments for aggressive accruals.

**Clawback Type**

Clawback policies can differ by the event that triggers the clawback. We next explore whether our results differ by the type of clawback policy adopted. Dehaan et al. (2013) refer to clawback policies that are triggered by any restatement as "robust clawbacks," and policies triggered only by intentional misstatements as "misconduct clawbacks". Because robust clawbacks apply to unintentional errors in addition to intentional manipulations, they are more likely to discourage executives from aggressive financial reporting choices that could trigger a restatement. Accordingly, Dehaan et al. (2013) find a stronger subsequent improvement in earnings quality following adoption of a robust clawback policy.

In our setting, we explore whether the increase in the relative costs of accrual-based earnings management following clawback adoption is greater for robust clawback policies than for misconduct clawback policies. Table 7 reports the results of examining the effect of clawback adoption on *ETR* by clawback type, using the definitions from Dehaan et al. (2013). Approximately 53 percent (or 123 out of 233) of clawback adopters in our sample have a robust clawback. Notably, we observe a stronger association between robust clawback adoption and *ETR* (Estimate = -0.023, $p$-value < 0.01) than between misconduct clawback adoption and *ETR* (Estimate = -0.013, $p$-value < 0.05).[31] Untabulated Welch tests confirm that the difference in these coefficient estimates (1) and (2) is marginally significant ($p$-value = 0.104). Overall, this test complements the results from tests of accruals in Tables 5 and 6 and highlights the importance of the type of clawback adoption in influencing tax policy.

[31] One clawback adopter disclosed that their clawback policy can be triggered for poor performance. We include this clawback adoption in the robust clawback sample.

## ADDITIONAL ANALYSES

### Supplemental Tests

#### *Tax Outcome Volatility*

If the lower ETRs observed among clawback adopting companies result from increased tax-planning investments rather than opportunistic reporting of tax accruals, we should not observe an increase in subsequent tax outcome variability. The volatility of tax outcomes is important because a less persistent ETR could invite more investor and regulatory scrutiny potentially putting executives at greater risk of triggering a clawback policy. In contrast, a more persistent ETR would be consistent with executives increasing investment in tax planning.

We estimate regressions using the coefficient of variation in a company's *ETR*, which we label as *CV_ETR*, as the dependent variable. We follow the approach outlined in Neuman et al. (2013) and Neuman (2016) and measure the coefficient of variation as the standard deviation of a company's *ETR* over fiscal year *t*-4 to *t*, divided by the mean effective tax rate also measured over fiscal year *t*-4 to *t*. Intuitively, for a given level of *ETR*, a lower *CV_ETR* would reflect more persistent and thus more sustainable tax planning.

Column 1 of Table 8 reports the results. We observe a negative and significant coefficient on *AFTER CLAWBACK* (-0.148, *p*-value < 0.05) suggesting that companies exhibit less tax outcome volatility after clawback adoption. Our results also hold using company fixed effects instead of clustering by company. This result suggests that the lower ETR observed among clawback adopters reflects more sustainable tax planning and thus a shift in tax planning attributes following clawback adoption.

#### *Tax Disclosure*

Prior research associates lower ETRs with an increase in information risk (Balakrishnan et al. 2018; Hasan, Hoi, Wu, and Zhang 2014) and an increase in unwanted attention from regulators (Kubick et al. 2016). Balakrishnan et al. (2018) find that companies with lower ETRs increase the volume of tax-related disclosure to increase transparency, and Kubick et al. (2016) find that companies receiving tax-related scrutiny from the SEC increase the length of their income tax footnotes in subsequent filings. Thus, the level of ETRs can affect tax disclosure attributes.

We extract tax footnotes from 10-K filings and consider two attributes of tax disclosure: the Gunning-Fog Index of readability (*FOG*) and the length of footnotes (*WORD COUNT*).[32] We view the length-based measure as providing a context to interpret the readability-based measure. We use log-transformations of these variables to mitigate the influence of outliers.

Columns 2 and 3 of Table 8 report results from estimating regressions for each tax disclosure metric. We observe an increase in the readability of the income tax footnote following clawback adoption. Specifically, *FOG* is lower after clawback adoption (Estimate = -0.027, *p*-value < 0.10), and we observe an increase in *WORD COUNT* following clawback adoption (Estimate = 0.128, *p*-value < 0.01). Collectively, these results suggest that clawback adopters subsequently provide income tax disclosures that are easier to read and contain more information. Importantly, if clawback adopters are engaging in more opportunistic tax behavior, they would be less likely to disclose tax-related information or prefer to disclose it in a way that is less understandable. Overall, we do not observe a pattern of disclosure consistent with opportunistic tax behavior.

**Changes Design**

[32] *FOG* is computed as 0.4×[(words/sentences) + 100(complex words/words)], where higher values reflect more difficult to read text. We measure the length of footnotes using the number of words (*WORD COUNT*).

In further tests, we estimate a changes specification in which Δ*ETR* is the dependent variable, and Δ*CLAW ADOPT* is the test variable. Control variables are the same as in Equation (2) but measured as changes, thereby eliminating unobserved characteristics that are static during this interval. As expected, the coefficient on Δ*CLAW ADOPT* is negative and significant (*p*-value < 0.05) confirming an association between clawback adoption and a reduction in *ETR*.

**Alternative Scalars for ETR**

Although our regressions include controls for profitability, one concern is whether the observed reduction in *ETR* is attributable to changes in pre-tax income or changes in income tax expense. To this end, we re-estimate our difference-in-differences regressions by scaling income tax expense by total assets instead of pre-tax income and find our results hold. As a further test, we use the natural logarithm of income tax expense as well as pre-tax income as separate dependent variables and re-estimate our difference-in-differences regressions. We observe a significant reduction in income tax expense, but no significant effect on pre-tax income. Overall, these robustness tests confirm that the observed reductions in *ETR* reflect changes in tax expense rather than contemporaneous changes in profitability.



**Alternative Measures of Tax Outcomes**

In untabulated tests, we estimate difference-in-differences regressions using alternative measures of tax outcomes: temporary and permanent book-tax differences and cash taxes paid. Temporary book-tax differences represent tax deferral tax activities that do not affect ETRs whereas permanent differences represent tax activities that have a direct effect on earnings. We find an insignificant coefficient on *CLAWBACK*×*POST* when using temporary differences as our dependent variable, but we observe a positive and significant coefficient when using permanent

book-tax differences, which indicate that companies on average report higher book income (compared to taxable income) following clawback adoption.

Finally, we acknowledge that tax planning is likely to generate cash flow effects. To estimate these "tax cash flow" effects, and to further ensure that results reflect tax planning and not an income (i.e., denominator) effect, we replace *ETR* with cash taxes paid as a percentage of total assets and re-estimate our difference-in-differences regression. Untabulated results suggest that adopters also experience a significant increase in cash tax savings after clawback adoption.

## CONCLUSION

This study examines the effect of voluntary clawback adoption on effective tax rates. Under the Dodd-Frank Act of 2010, all companies will soon be required to implement a policy to recover executive compensation in the event of financial restatements. In the interim, companies have voluntarily adopted clawback policies and disclosed them in corporate filings. Chan et al. (2015) find that companies substitute accruals earnings management with real earnings management following clawback adoption, concluding that policies designed to increase earnings quality (clawbacks) could lead companies to seek alternative means of meeting earnings expectations. We suggest that tax planning that decreases effective tax rates and increases earnings allows companies to continue to fund current investment without necessarily sacrificing long-term performance. Thus, additional investment in tax planning is a viable alternative means of meeting earnings expectations.

We use a sample of clawback adoptions to investigate the extent to which clawback adoption might lead to more investments in tax planning. Using a propensity score matched sample, and a difference-in-differences design, we predict and find that companies have lower effective tax rates following clawback adoption. Among clawback adopting companies, we

observe an increase in the likelihood of using a new tax haven subsidiary, an increase in auditor-provided tax services, and an increase in company connections to other low tax companies following the adoption of a clawback policy. We also observe a decrease in accruals (including tax-related accruals) as well as tax-related misstatements following the adoption of a clawback policy. Finally, we find that companies have more stable effective tax rates and higher tax disclosure quality after clawback adoption. Collectively, our results suggest that companies invest in more tax planning following the adoption of a clawback policy and that there is an association between that additional investment and better, more sustainable tax outcomes.

We acknowledge that our study has limitations. First, we recognize that mandatory clawback adoption would provide sharper identification in our tests. However, the SEC has committed to mandating clawback adoption and, as a result, companies have been increasingly adopting clawback policies. These adoptions provide an opportunity to examine the effects of clawback adoption before it becomes mandatory. Second, although we assess the degree to which unobservable factors could affect our results, we recognize that propensity score matching matches on observable dimensions, and we interpret our results with that caveat in mind.

Our study contributes to several literatures. First, we add to the literature on clawback adoption, which is important considering that all public companies will soon be required to have a clawback policy. Unlike prior research that focuses on financial reporting benefits of clawbacks or the substitution between real and accruals-based earnings management, our study provides a unique contribution by documenting a positive spillover effect of clawback adoption on corporate tax policy. Second, we contribute to the tax literature by isolating a relation between clawback adoptions and tax outcomes, thereby providing a more thorough understanding of the effects of broad-based compensation policies on corporate tax planning.

Third, we contribute to the tax risk and tax disclosure literatures by suggesting that tax planning encouraged by clawbacks has a positive effect on the persistence of tax outcomes and the quality of tax information disclosed in financial statements. Finally, our results should be of interest to auditors, policymakers, regulators, and investors, because DFA 954 and the SEC mandate that all companies will soon be required to adopt clawback provisions.

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## APPENDIX: Variable Definitions

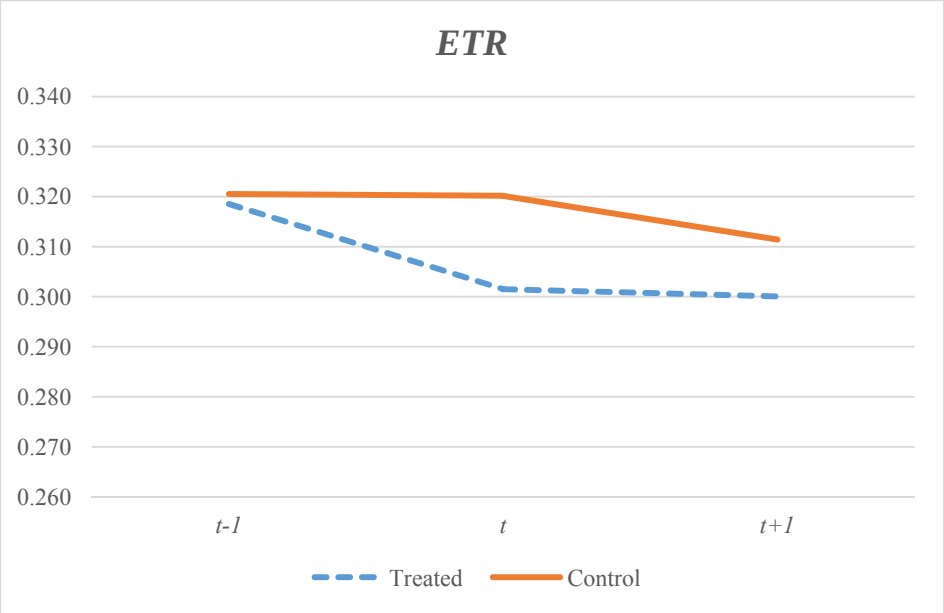
| Variable | Definition |
|---|---|
| **A.1. Dependent Variables** | |
| $CLAW\ ADOPT_t$ | Equals one if clawback policy adoption occurs during the fiscal year, zero if never adopted |
| $ETR_t$ | The annual book effective tax rate equals total tax expense (Compustat TXT) over pretax book income (Compustat PI) |
| $TAX\ HAVEN_t$ | Equals one if the company reports a new material subsidiary located in a tax haven country, following the definition in Dyreng and Lindsey (2009) |
| $TAX\ EXPERT_t$ | Equals one if the company uses an industry tax expert audit firm in the next fiscal year, zero otherwise |
| $LOGTAXFEES_t$ | Natural logarithm of tax fees paid to the auditor in the next fiscal year |
| $LOW\ TAX\ TIES_t$ | Percentage of connections to other low-tax companies based on ETR |
| $CV\_ETR_t$ | The coefficient of variation of *ETR,* computed from fiscal year *t*-4 to *t* |
| $FOG_t$ | Natural logarithm of the Gunning-Fog index of the tax footnote computed as 0.40×[(words/sentences)+100×(complex words/words)] |
| $WORD\ COUNT_t$ | Natural logarithm of the number of words in the tax footnote |
| $ACCRUALS_t$ | The absolute value of pre-tax discretionary accruals, using the modified Jones model |
| $TAX\ ACCRUALS_t$ | The absolute value of tax-related accruals, defined as tax expense minus cash taxes paid, divided by lagged assets |
| $TAX\ MISSTATE_t$ | Equals one if there is a future tax-related misstatement, and zero otherwise |
| **A.2. Independent Variables** | |
| $CLAWBACK{\times}POST_t$ | Equals one during the year of, and all years following, the adoption of a clawback policy (for the matched sample) |
| $AFTER\ CLAWBACK_t$ | Equals one during the year of, and all years following, the adoption of a clawback (clawback companies only) |
| **A.3. First-stage Controls (Eq. 1)** | |
| $PAST\ RESTATE_{t-1}$ | Equals one if the company has a restatement within the last three years |
| $PAST\ LAWSUIT_{t-1}$ | Equals one if the company has been a defendant in a lawsuit within the last three years |
| $SIZE_{t-1}$ | Natural log of total assets |
| $STOCK\ VOL_{t-1}$ | Annualized standard deviation of daily returns over the previous fiscal year |
| $R\&D_{t-1}$ | Research and development activity equals R&D expense (Compustat XRD) by lagged total assets (Compustat AT) |
| $SEGMENTS_{t-1}$ | The number of business segments |
| $PROFITABILITY_{t-1}$ | Equals EBITDA divided by total assets (Compustat OIBDP/AT) |
| $STOCK\ RET_{t-1}$ | Lagged annual stock return |
| $LEV_{t-1}$ | Long-term debt (Compustat DLTT) divided by lagged total assets (Compustat AT) |
| $TOBINS\ Q_{t-1}$ | The book value of total debt plus market cap, divided by total assets |
| $ENFORCE\ INDEX_{t-1}$ | State-level non-competition enforcement index of Garmaise (2011) |
| $EARN\ VOL_{t-1}$ | The standard deviation of quarterly pretax income computed over the previous eight fiscal quarters |
| $BOARD\ SIZE_{t-1}$ | Number of directors serving on the board |
| $PCT\ IND_{t-1}$ | Percentage of directors classified as independent |
| $PCT\ BUSY\ IND_{t-1}$ | Percentage of independent directors who serve on more than two boards |
| $CEO\ CHAIR_{t-1}$ | Equals one if the CEO is also Chair of the board |
| $NUM\ FIN\ EXPERTS_{t-1}$ | Number of board members who are financial experts |
| $CLAW\ INTERLOCK_{t-1}$ | Equals one if there is a board interlock with another company that has a clawback |
| $LOGCASHCOMP_{t-1}$ | Natural logarithm of cash-based compensation |
| $LOGDELTA_{t-1}$ | Natural logarithm of delta (defined as the sensitivity of the CEO's option portfolio to a $1 increase in stock price |
| $LOGVEGA_{t-1}$ | Natural logarithm of vega (defined as the sensitivity of the CEO's option portfolio to a 0.01 increase in stock volatility |

## APPENDIX: Variable Definitions (Continued)

| Variable | Definition |
|---|---|
| **A.4. Second-stage Controls (Eq. 2)** | |
| $CLAWBACK_t$ | Equals one if the company has adopted a clawback policy at any point in the sample |
| $POST_t$ | Equals one during the year of, and all fiscal years after, the adoption of a clawback provision (matched sample) |
| $ROA_t$ | Return on assets equals pretax book income (Compustat PI) divided by the lagged total assets (Compustat AT) |
| $ACC_t$ | Performance-matched pre-tax discretionary accruals following the procedures in Frank et al. (2009) |
| $RTM_t$ | Real transactions management, computed as the sum of abnormal discretionary expenses and abnormal cash flows from operations, following Chan et al. (2015) |
| $SIZE_{t-1}$ | Company size is the natural logarithm of lagged assets (Compustat AT) |
| $FI_t$ | Equals one if the company reports positive pretax income from foreign operations (Compustat PIFO) |
| $EQINC_t$ | Equals one if the company reports positive equity in earnings (Compustat ESUB) |
| $INTAN_t$ | Intangibles (Compustat INTAN) divided by lagged total assets (Compustat AT) |
| $PPE_t$ | Net property, plant, and equipment (Compustat PPENT) divided by lagged total assets (Compustat AT) |
| $NOL_t$ | An indicator variable equal to one if the company reports a positive tax loss carryforward during the year (Compustat TLCF), zero otherwise |
| $\Delta NOL_t$ | The change in NOL during the year scaled by lagged total assets (Compustat AT) |
| $MTB_{t-1}$ | Market-to-book ratio equals the ratio of the lagged market value of equity (Compustat PRCC_F*CSHO) to lagged book value of equity (Compustat CEQ) |
| $LEV_t$ | Long-term debt (Compustat DLTT) divided by lagged total assets (Compustat AT) |
| $FCF_t$ | Free cash flow equals operating cash flow minus capital expenditures (Compustat OANCF - CAPX) scaled by lagged total assets (Compustat AT) |
| $R\&D_t$ | Research and development activity equals R&D expense (Compustat XRD) by lagged total assets (Compustat AT) |

## FIGURE 1

This figure depicts the mean *ETR* for companies that adopted a clawback policy in fiscal year *t* (Treated) and companies that have not adopted a clawback but otherwise appear similar on observable characteristics (Control). A tabular summary of mean *ETR* for treatment and control companies, along with one-sided *p*-values from *t*-tests of differences in means, is reported below the figure.




| | *t*-1 | *t* | *t*+1 |
|---|---|---|---|
| Treated | 0.319 | 0.302 | 0.300 |
| Control | 0.321 | 0.320 | 0.311 |
| *p*-value | 0.411 | 0.010 | 0.078 |

# TABLE 1
## Determinants of Clawback Adoption

This table reports sample selection procedures (Panel A), descriptive statistics (Panel B) and logistic regression results (Panel C) for estimating Equation (1) (determinants of clawback adoption). We define all variables in the Appendix. To mitigate the influence of outliers, we winsorize all continuous variables at the 1% and 99% levels.

**Panel A: Sample Selection**

| | |
|---|---|
| Company-year observations in Compustat during fiscal years 2004-2012 | 74,318 |
| Less: Financials and utilities | (14,933) |
| Less: Missing control variables and other data requirements described in Section III | (44,114) |
| Less: Company-year observations outside the merge with BoardEx, CRSP, and ExecuComp | (7,343) |
| Less: Observations before and after clawback adoption (for adopting companies only) | (2,837) |
| Less: Non-adopters that do not have at least one observation before and after the adoption of a clawback (if matched to an adopter) | (2,456) |
| Equals: Sample of company-year observations used to estimate Equation (1) | 2,635 |

**Panel B: Descriptive Statistics**

| Variable | *N* | Mean | Std dev | 10th Pctl | 50th Pctl | 90th Pctl |
|---|---|---|---|---|---|---|
| $ETR_t$ | 2,635 | 0.328 | 0.083 | 0.223 | 0.344 | 0.398 |
| $CLAW\ ADOPT_t$ | 2,635 | 0.110 | 0.313 | 0.000 | 0.000 | 1.000 |
| $PAST\ RESTATE_{t-1}$ | 2,635 | 0.129 | 0.336 | 0.000 | 0.000 | 1.000 |
| $PAST\ LAWSUIT_{t-1}$ | 2,635 | 0.496 | 0.500 | 0.000 | 0.000 | 1.000 |
| $SIZE_{t-1}$ | 2,635 | 7.140 | 1.398 | 5.487 | 7.014 | 9.071 |
| $STOCK\ VOL_{t-1}$ | 2,635 | 0.397 | 0.165 | 0.221 | 0.366 | 0.622 |
| $R\&D_{t-1}$ | 2,635 | 0.028 | 0.046 | 0.000 | 0.000 | 0.098 |
| $SEGMENTS_{t-1}$ | 2,635 | 5.147 | 3.077 | 2.000 | 5.000 | 9.000 |
| $PROFITABILITY_{t-1}$ | 2,635 | 0.178 | 0.081 | 0.096 | 0.162 | 0.282 |
| $STOCK\ RET_{t-1}$ | 2,635 | 0.241 | 0.571 | -0.295 | 0.164 | 0.785 |
| $LEV_{t-1}$ | 2,635 | 0.153 | 0.171 | 0.000 | 0.117 | 0.368 |
| $TOBINS\ Q_{t-1}$ | 2,635 | 1.977 | 1.291 | 0.875 | 1.597 | 3.486 |
| $ENFORCE\ INDEX_{t-1}$ | 2,635 | 3.781 | 2.366 | 0.000 | 4.000 | 6.000 |
| $EARN\ VOL_{t-1}$ | 2,635 | 45.722 | 130.998 | 2.210 | 10.212 | 91.199 |
| $BOARD\ SIZE_{t-1}$ | 2,635 | 9.287 | 2.355 | 7.000 | 9.000 | 13.000 |
| $PCT\ IND_{t-1}$ | 2,635 | 0.760 | 0.117 | 0.583 | 0.778 | 0.900 |
| $PCT\ BUSY\ IND_{t-1}$ | 2,635 | 0.462 | 0.229 | 0.167 | 0.500 | 0.750 |
| $CEO\ CHAIR_{t-1}$ | 2,635 | 0.628 | 0.484 | 0.000 | 1.000 | 1.000 |
| $NUM\ FIN\ EXPERTS_{t-1}$ | 2,635 | 2.000 | 1.275 | 1.000 | 2.000 | 4.000 |
| $CLAW\ INTERLOCK_{t-1}$ | 2,635 | 0.447 | 0.497 | 0.000 | 0.000 | 1.000 |
| $LOGCASHCOMP_{t-1}$ | 2,635 | 6.693 | 1.115 | 5.991 | 6.709 | 7.631 |
| $LOGDELTA_{t-1}$ | 2,635 | 5.678 | 1.599 | 3.852 | 5.683 | 7.573 |
| $LOGVEGA_{t-1}$ | 2,635 | 3.556 | 2.061 | 0.000 | 3.992 | 5.865 |

## TABLE 1 (Continued)
## Determinants of Clawback Adoption

This table reports sample selection procedures (Panel A), descriptive statistics (Panel B) and logistic regression results (Panel C) for estimating Equation (1) (determinants of clawback adoption). We define all variables in the Appendix. To mitigate the influence of outliers, we winsorize all continuous variables at the 1% and 99% levels.

**Panel C: Logit**

| | *CLAW ADOPT*$_t$ | |
|---|---|---|
| Variable | Estimate | *p*-value |
| *PAST RESTATE*$_{t-1}$ | -0.391 | 0.103 |
| *PAST LAWSUIT*$_{t-1}$ | 0.244 | 0.165 |
| *SIZE*$_{t-1}$ | 0.436 | 0.000 |
| *STOCK VOL*$_{t-1}$ | 0.373 | 0.418 |
| *R&D*$_{t-1}$ | 1.623 | 0.431 |
| *SEGMENTS*$_{t-1}$ | -0.021 | 0.483 |
| *PROFITABILITY*$_{t-1}$ | 1.753 | 0.125 |
| *STOCK RET*$_{t-1}$ | 0.045 | 0.680 |
| *LEV*$_{t-1}$ | -0.864 | 0.095 |
| *TOBINS Q*$_{t-1}$ | -0.122 | 0.134 |
| *ENFORCE INDEX*$_{t-1}$ | -0.060 | 0.118 |
| *EARN VOL*$_{t-1}$ | -0.001 | 0.115 |
| *BOARD SIZE*$_{t-1}$ | 0.053 | 0.205 |
| *PCT IND*$_{t-1}$ | 2.889 | 0.000 |
| *PCT BUSY IND*$_{t-1}$ | 0.389 | 0.324 |
| *CEO CHAIR*$_{t-1}$ | -0.137 | 0.425 |
| *NUM FIN EXPERTS*$_{t-1}$ | 0.110 | 0.088 |
| *CLAW INTERLOCK*$_{t-1}$ | 0.603 | 0.000 |
| *LOGCASHCOMP*$_{t-1}$ | -0.007 | 0.904 |
| *LOGDELTA*$_{t-1}$ | -0.101 | 0.147 |
| *LOGVEGA*$_{t-1}$ | 0.065 | 0.179 |
| Pseudo R-squared | 0.14 | |
| N (company-years) | 2,635 | |
| N (companies) | 977 | |
| Area under ROC curve | 0.76 | |
| Correctly classified (%) | 89.26 | |
| Hosmer-Lemeshow goodness of fit | 7.12 | 0.52 |

# TABLE 2
## Covariate Balance

This table reports the covariate balance of the matched sample constructed from the logistic regression reported in Table 1. Panel A reports the fiscal year and industry distribution. Panel B reports the differences in means for each covariate. All *p*-values are two-tailed.

**Panel A: Fiscal year and Industry distributions**

| Fiscal year | Treatment | Control | Total |
|---|---|---|---|
| 2005 | 11 | 11 | 22 |
| 2006 | 13 | 13 | 26 |
| 2007 | 34 | 34 | 68 |
| 2008 | 26 | 26 | 52 |
| 2009 | 36 | 36 | 72 |
| 2010 | 58 | 58 | 116 |
| 2011 | 55 | 55 | 110 |
| Total | 233 | 233 | 466 |

| Two-digit SIC | Treatment | Control | Total |
|---|---|---|---|
| 13 | 3 | 3 | 6 |
| 20 | 14 | 14 | 28 |
| 23 | 4 | 4 | 8 |
| 25 | 2 | 2 | 4 |
| 26 | 2 | 2 | 4 |
| 27 | 2 | 2 | 4 |
| 28 | 25 | 25 | 50 |
| 29 | 3 | 3 | 6 |
| 30 | 3 | 3 | 6 |
| 31 | 1 | 1 | 2 |
| 33 | 4 | 4 | 8 |
| 34 | 3 | 3 | 6 |
| 35 | 23 | 23 | 46 |
| 36 | 19 | 19 | 38 |
| 37 | 9 | 9 | 18 |
| 38 | 18 | 18 | 36 |
| 39 | 2 | 2 | 4 |
| 44 | 1 | 1 | 2 |
| 45 | 1 | 1 | 2 |
| 48 | 6 | 6 | 12 |
| 50 | 9 | 9 | 18 |
| 51 | 4 | 4 | 8 |
| 53 | 4 | 4 | 8 |
| 54 | 1 | 1 | 2 |
| 55 | 2 | 2 | 4 |
| 56 | 9 | 9 | 18 |
| 58 | 6 | 6 | 12 |
| 59 | 5 | 5 | 10 |
| 73 | 35 | 35 | 70 |
| 79 | 1 | 1 | 2 |
| 80 | 6 | 6 | 12 |
| 82 | 4 | 4 | 8 |
| 87 | 2 | 2 | 4 |
| Total | 233 | 233 | 466 |

## TABLE 2 (Continued)
## Covariate Balance

This table reports the covariate balance of the matched sample constructed from the logistic regression reported in Table 1. Panel A reports the fiscal year and industry distribution. Panel B reports the differences in means for each covariate. All *p*-values are two-tailed.

**Panel B: Covariate Balance**

| Variable | Treatment | Control | *p*-value |
|---|---|---|---|
| $PAST\ RESTATE_{t-1}$ | 0.103 | 0.073 | 0.253 |
| $PAST\ LAWSUIT_{t-1}$ | 0.652 | 0.614 | 0.388 |
| $SIZE_{t-1}$ | 7.936 | 7.701 | 0.081 |
| $STOCK\ VOL_{t-1}$ | 0.375 | 0.408 | 0.032 |
| $R\&D_{t-1}$ | 0.033 | 0.034 | 0.832 |
| $SEGMENTS_{t-1}$ | 5.700 | 5.790 | 0.776 |
| $PROFITABILITY_{t-1}$ | 0.175 | 0.189 | 0.063 |
| $STOCK\ RET_{t-1}$ | 0.208 | 0.277 | 0.200 |
| $LEV_{t-1}$ | 0.167 | 0.158 | 0.489 |
| $TOBINS\ Q_{t-1}$ | 1.869 | 2.037 | 0.135 |
| $ENFORCE\ INDEX_{t-1}$ | 3.631 | 3.597 | 0.875 |
| $EARN\ VOL_{t-1}$ | 80.437 | 83.866 | 0.833 |
| $BOARD\ SIZE_{t-1}$ | 10.240 | 9.730 | 0.016 |
| $PCT\ IND_{t-1}$ | 0.806 | 0.804 | 0.805 |
| $PCT\ BUSY\ IND_{t-1}$ | 0.530 | 0.522 | 0.669 |
| $CEO\ CHAIR_{t-1}$ | 0.635 | 0.549 | 0.060 |
| $NUM\ FIN\ EXPERTS_{t-1}$ | 2.313 | 2.313 | 1.000 |
| $CLAW\ INTERLOCK_{t-1}$ | 0.687 | 0.691 | 0.921 |
| $LOGCASHCOMP_{t-1}$ | 6.799 | 6.609 | 0.198 |
| $LOGDELTA_{t-1}$ | 5.940 | 5.823 | 0.436 |
| $LOGVEGA_{t-1}$ | 4.273 | 3.925 | 0.085 |
| $ETR_{t-1}$ | 0.319 | 0.321 | 0.823 |

## TABLE 3
## The Effects of Clawback Adoption on Subsequent ETRs

This table reports descriptive statistics (Panel A) and OLS regression results (Panel B) from estimating Equation (2) (the effect of clawback adoption on subsequent ETRs). We define all variables in the Appendix. For brevity, we do not report the intercept, and the fiscal year, industry and company fixed effects. Column (1) includes year and industry fixed effects. Column (2) includes year and company fixed effects. Columns (3) and (4) include industry fixed effects and report regression results for the subsamples of adopters and non-adopters, respectively. All *p*-values are two-tailed and, except for Column 2, we cluster standard errors by company.

**Panel A: Descriptive Statistics**

| Variable | *N* | Mean | Std dev | 10th Pctl | 50th Pctl | 90th Pctl |
|---|---|---|---|---|---|---|
| $ETR_t$ | 3,511 | 0.315 | 0.087 | 0.203 | 0.324 | 0.392 |
| $ROA_t$ | 3,511 | 0.152 | 0.092 | 0.060 | 0.134 | 0.265 |
| $ACC_t$ | 3,511 | -0.013 | 0.050 | -0.071 | -0.010 | 0.040 |
| $RTM_t$ | 3,511 | 0.094 | 0.429 | -0.246 | 0.036 | 0.410 |
| $SIZE_{t-1}$ | 3,511 | 7.857 | 1.446 | 6.071 | 7.707 | 9.937 |
| $FI_t$ | 3,511 | 0.714 | 0.452 | 0.000 | 1.000 | 1.000 |
| $EQINC_t$ | 3,511 | 0.250 | 0.433 | 0.000 | 0.000 | 1.000 |
| $INTAN_t$ | 3,511 | 0.280 | 0.234 | 0.006 | 0.239 | 0.589 |
| $PPE_t$ | 3,511 | 0.236 | 0.194 | 0.058 | 0.181 | 0.494 |
| $NOL_t$ | 3,511 | 0.506 | 0.500 | 0.000 | 1.000 | 1.000 |
| $\Delta NOL_t$ | 3,511 | 0.004 | 0.042 | -0.009 | 0.000 | 0.019 |
| $MTB_{t-1}$ | 3,511 | 4.084 | 3.428 | 1.553 | 3.097 | 7.599 |
| $LEV_t$ | 3,511 | 0.171 | 0.162 | 0.000 | 0.148 | 0.373 |
| $FCF_t$ | 3,511 | 0.105 | 0.081 | 0.023 | 0.099 | 0.203 |
| $R\&D_t$ | 3,511 | 0.033 | 0.045 | 0.000 | 0.013 | 0.103 |
| $STOCK\ VOL_{t-1}$ | 3,511 | 0.361 | 0.149 | 0.205 | 0.330 | 0.559 |
| $EARN\ VOL_{t-1}$ | 3,511 | 77.796 | 160.194 | 3.819 | 19.877 | 204.165 |
| $BOARD\ SIZE_{t-1}$ | 3,511 | 10.174 | 2.367 | 7.000 | 10.000 | 13.000 |
| $PCT\ IND_{t-1}$ | 3,511 | 0.790 | 0.109 | 0.625 | 0.818 | 0.909 |
| $PCT\ BUSY\ IND_{t-1}$ | 3,511 | 0.531 | 0.211 | 0.250 | 0.556 | 0.800 |
| $CEO\ CHAIR_{t-1}$ | 3,511 | 0.609 | 0.488 | 0.000 | 1.000 | 1.000 |
| $NUM\ FIN\ EXPERTS_{t-1}$ | 3,511 | 2.257 | 1.384 | 1.000 | 2.000 | 4.000 |
| $LOGCASHCOMP_{t-1}$ | 3,511 | 6.829 | 1.433 | 6.215 | 6.888 | 7.826 |
| $LOGDELTA_{t-1}$ | 3,511 | 6.046 | 1.606 | 4.176 | 6.100 | 7.892 |
| $LOGVEGA_{t-1}$ | 3,511 | 4.293 | 2.136 | 0.000 | 4.746 | 6.612 |
| *Pretax income* | 3,511 | 1,138.57 | 2,748.01 | 51.46 | 299.06 | 2,633.70 |
| *Lagged total assets* | 3,511 | 8,519.54 | 19,861.31 | 433.07 | 2,224.36 | 20,687.00 |

## TABLE 3 (Continued)
## The Effects of Clawback Adoption on Subsequent ETRs

This table reports descriptive statistics (Panel A) and OLS regression results (Panel B) from estimating Equation (2) (the effect of clawback adoption on subsequent ETRs). We define all variables in the Appendix. For brevity, we do not report the intercept, and the fiscal year, industry and company fixed effects. Column (1) includes year and industry fixed effects. Column (2) includes year and company fixed effects. Columns (3) and (4) include industry fixed effects and report regression results for the subsamples of adopters and non-adopters, respectively. All *p*-values are two-tailed and, except for Column 2, we cluster standard errors by company.

**Panel B: Difference-in-Differences Regressions**

| | (1) | | (2) | | (3) | | (4) | |
|---|---|---|---|---|---|---|---|---|
| Dependent variable: | $ETR_t$ | | $ETR_t$ | | $ETR_t$ | | $ETR_t$ | |
| Sample partition: | Full sample | | Full sample | | Adopters | | Non-adopters | |
| Variable | Estimate | *p*-value | Estimate | *p*-value | Estimate | *p*-value | Estimate | *p*-value |
| $CLAWBACK$ | 0.009 | 0.129 | | | | | | |
| $POST_t$ | 0.005 | 0.374 | 0.004 | 0.275 | -0.016 | 0.001 | -0.001 | 0.841 |
| $CLAWBACK \times POST_t$ | -0.016 | 0.025 | -0.017 | 0.000 | | | | |
| $ROA_t$ | 0.060 | 0.111 | -0.066 | 0.018 | 0.078 | 0.090 | 0.011 | 0.842 |
| $ACC_t$ | -0.136 | 0.006 | -0.094 | 0.003 | -0.190 | 0.003 | -0.099 | 0.189 |
| $RTM_t$ | -0.006 | 0.457 | -0.012 | 0.021 | -0.002 | 0.820 | -0.014 | 0.253 |
| $SIZE_{t-1}$ | -0.009 | 0.002 | 0.003 | 0.639 | -0.008 | 0.022 | -0.005 | 0.204 |
| $FI_t$ | -0.028 | 0.000 | -0.019 | 0.000 | -0.027 | 0.000 | -0.032 | 0.006 |
| $EQINC_t$ | -0.006 | 0.236 | -0.008 | 0.162 | -0.008 | 0.238 | -0.010 | 0.288 |
| $INTAN_t$ | 0.021 | 0.115 | 0.071 | 0.000 | 0.005 | 0.773 | 0.034 | 0.058 |
| $PPE_t$ | -0.007 | 0.746 | -0.060 | 0.014 | 0.004 | 0.881 | -0.021 | 0.520 |
| $NOL_t$ | 0.002 | 0.598 | 0.005 | 0.231 | 0.000 | 0.979 | 0.003 | 0.701 |
| $\Delta NOL_t$ | -0.017 | 0.646 | -0.019 | 0.480 | 0.006 | 0.914 | -0.059 | 0.223 |
| $MTB_{t-1}$ | 0.000 | 0.753 | 0.001 | 0.060 | 0.000 | 0.645 | 0.001 | 0.596 |
| $LEV_t$ | 0.015 | 0.334 | -0.030 | 0.032 | 0.012 | 0.565 | 0.006 | 0.803 |
| $FCF_t$ | -0.116 | 0.002 | -0.032 | 0.303 | -0.142 | 0.003 | -0.056 | 0.309 |
| $R\&D_t$ | -0.241 | 0.011 | 0.206 | 0.044 | -0.342 | 0.001 | -0.139 | 0.300 |
| $STOCK\ VOL_{t-1}$ | -0.020 | 0.302 | -0.006 | 0.662 | -0.019 | 0.233 | 0.019 | 0.391 |
| $EARN\ VOL_{t-1}$ | 0.000 | 0.154 | 0.000 | 0.001 | 0.000 | 0.042 | 0.000 | 0.471 |
| $BOARD\ SIZE_{t-1}$ | -0.001 | 0.292 | -0.002 | 0.057 | 0.001 | 0.512 | -0.002 | 0.174 |
| $PCT\ IND_{t-1}$ | -0.055 | 0.003 | -0.011 | 0.566 | -0.029 | 0.237 | -0.058 | 0.045 |
| $PCT\ BUSY\ IND_{t-1}$ | -0.017 | 0.065 | -0.016 | 0.096 | -0.009 | 0.412 | -0.026 | 0.093 |
| $CEO\ CHAIR_{t-1}$ | 0.005 | 0.289 | 0.005 | 0.209 | 0.006 | 0.305 | 0.004 | 0.556 |
| $NUM\ FIN\ EXPERTS_{t-1}$ | -0.001 | 0.550 | 0.001 | 0.519 | -0.004 | 0.075 | 0.002 | 0.574 |
| $LOGCASHCOMP_{t-1}$ | 0.002 | 0.103 | 0.000 | 0.699 | -0.001 | 0.504 | 0.002 | 0.167 |
| $LOGDELTA_{t-1}$ | 0.002 | 0.282 | 0.000 | 0.981 | 0.004 | 0.122 | -0.001 | 0.824 |
| $LOGVEGA_{t-1}$ | -0.001 | 0.648 | -0.001 | 0.274 | -0.002 | 0.158 | 0.001 | 0.577 |
| $R^2$ | 0.30 | | 0.57 | | 0.33 | | 0.35 | |
| N (company-years) | 3,511 | | 3,511 | | 1,776 | | 1,735 | |
| N (companies) | 402 | | 402 | | 233 | | 169 | |
| N (treatment-years) | 1,776 | | 1,776 | | 1,776 | | | |
| N (control-years) | 1,735 | | 1,735 | | | | 1,735 | |

## TABLE 4
## Tax Planning Activities through which Clawback Adopters lower ETRs

This table reports OLS regressions that examine tax planning activities through which clawback adopters subsequently lower their ETRs. We define all variables in the appendix. For brevity, we do not report the intercept and the industry fixed effects. With the exception of *AFTER CLAWBACK*, *p*-values are two-tailed, and we cluster standard errors by company.

| | (1) | | (2) | | (3) | | (4) | |
|---|---|---|---|---|---|---|---|---|
| Dependent variable: | $TAX\ HAVEN_t$ | | $TAX\ EXPERT_t$ | | $LOGTAXFEES_t$ | | $LOW\ TAX\ TIES_t$ | |
| Variable | Estimate | *p*-value | Estimate | *p*-value | Estimate | *p*-value | Estimate | *p*-value |
| $AFTER\ CLAWBACK_t$ | 0.010 | 0.081 | 0.060 | 0.038 | 0.245 | 0.008 | 0.055 | 0.000 |
| $ROA_t$ | 0.034 | 0.560 | 0.518 | 0.185 | -1.101 | 0.268 | -0.224 | 0.050 |
| $ACC_t$ | -0.046 | 0.496 | -0.356 | 0.354 | -1.201 | 0.297 | -0.142 | 0.405 |
| $RTM_t$ | -0.015 | 0.067 | 0.101 | 0.165 | 0.012 | 0.949 | 0.013 | 0.381 |
| $SIZE_{t-1}$ | -0.002 | 0.483 | 0.040 | 0.181 | 0.365 | 0.000 | 0.013 | 0.152 |
| $FI_t$ | 0.009 | 0.331 | -0.001 | 0.990 | 0.439 | 0.018 | 0.040 | 0.059 |
| $EQINC_t$ | 0.003 | 0.657 | 0.008 | 0.902 | -0.271 | 0.136 | 0.000 | 0.999 |
| $INTAN_t$ | 0.010 | 0.657 | -0.037 | 0.758 | 0.441 | 0.243 | -0.061 | 0.198 |
| $PPE_t$ | 0.039 | 0.419 | 0.218 | 0.376 | -0.178 | 0.764 | -0.035 | 0.586 |
| $NOL_t$ | -0.006 | 0.352 | 0.050 | 0.338 | -0.219 | 0.125 | -0.006 | 0.689 |
| $\Delta NOL_t$ | 0.058 | 0.415 | -0.133 | 0.624 | 1.397 | 0.073 | 0.113 | 0.501 |
| $MTB_{t-1}$ | 0.000 | 0.902 | 0.007 | 0.536 | -0.020 | 0.475 | 0.002 | 0.414 |
| $LEV_t$ | 0.057 | 0.069 | 0.051 | 0.754 | -0.750 | 0.149 | 0.017 | 0.768 |
| $FCF_t$ | 0.022 | 0.759 | -0.302 | 0.427 | -0.856 | 0.418 | 0.160 | 0.257 |
| $R\&D_t$ | 0.045 | 0.533 | 0.522 | 0.442 | 4.078 | 0.059 | 0.877 | 0.002 |
| $STOCK\ VOL_{t-1}$ | 0.020 | 0.450 | 0.048 | 0.723 | 0.395 | 0.213 | 0.057 | 0.219 |
| $EARN\ VOL_{t-1}$ | 0.000 | 0.998 | 0.000 | 0.869 | 0.000 | 0.842 | 0.000 | 0.735 |
| $BOARD\ SIZE_{t-1}$ | 0.001 | 0.614 | -0.004 | 0.778 | 0.085 | 0.035 | 0.000 | 0.992 |
| $PCT\ IND_{t-1}$ | -0.011 | 0.747 | 0.367 | 0.079 | -0.786 | 0.241 | 0.202 | 0.008 |
| $PCT\ BUSY\ IND_{t-1}$ | 0.003 | 0.829 | 0.001 | 0.992 | 0.218 | 0.486 | 0.039 | 0.329 |
| $CEO\ CHAIR_{t-1}$ | 0.009 | 0.193 | -0.019 | 0.672 | 0.057 | 0.656 | 0.003 | 0.870 |
| $NUM\ FIN\ EXPERTS_{t-1}$ | 0.004 | 0.062 | -0.016 | 0.390 | -0.022 | 0.662 | -0.001 | 0.780 |
| $LOGCASHCOMP_{t-1}$ | -0.001 | 0.644 | -0.008 | 0.439 | 0.010 | 0.755 | -0.008 | 0.042 |
| $LOGDELTA_{t-1}$ | 0.001 | 0.681 | 0.008 | 0.638 | 0.092 | 0.105 | 0.001 | 0.851 |
| $LOGVEGA_{t-1}$ | -0.002 | 0.290 | 0.005 | 0.661 | 0.035 | 0.337 | 0.000 | 0.923 |
| $R^2$ | 0.03 | | 0.20 | | 0.37 | | 0.18 | |
| N (company-years) | 1,776 | | 1,271 | | 1,271 | | 1,776 | |
| N (companies) | 233 | | 217 | | 217 | | 233 | |

## TABLE 5
## Subsequent Accruals and Tax-Related Misstatements of Clawback Adopters

This table reports OLS regression results of subsequent pretax (Column 1) and tax-related (Column 2) accruals, as well as tax-related misstatements (Column 3) of clawback adopters. We define all variables in the appendix. For brevity, we do not report the intercept and the industry fixed effects. All *p*-values are two-tailed, and we cluster standard errors by company.

| | (1) | | (2) | | (3) | |
|---|---|---|---|---|---|---|
| Dependent variable: | $ACCRUALS_t$ | | $TAX\ ACCRUALS_t$ | | $TAX\ MISSTATE_t$ | |
| Variable | Estimate | *p*-value | Estimate | *p*-value | Estimate | *p*-value |
| $AFTER\ CLAWBACK_t$ | -0.009 | 0.000 | -0.001 | 0.062 | -0.036 | 0.007 |
| $ROA_t$ | 0.042 | 0.325 | 0.030 | 0.000 | -0.231 | 0.062 |
| $ACC_t$ | | | 0.021 | 0.017 | 0.056 | 0.731 |
| $RTM_t$ | -0.003 | 0.419 | 0.000 | 0.852 | -0.024 | 0.151 |
| $SIZE_{t-1}$ | -0.001 | 0.659 | -0.001 | 0.144 | 0.029 | 0.076 |
| $FI_t$ | -0.004 | 0.224 | 0.000 | 0.651 | -0.028 | 0.224 |
| $EQINC_t$ | 0.005 | 0.101 | 0.001 | 0.359 | -0.014 | 0.531 |
| $INTAN_t$ | 0.016 | 0.090 | 0.004 | 0.031 | 0.116 | 0.032 |
| $PPE_t$ | 0.059 | 0.000 | 0.005 | 0.112 | 0.099 | 0.231 |
| $NOL_t$ | 0.001 | 0.646 | 0.001 | 0.121 | -0.008 | 0.719 |
| $\Delta NOL_t$ | 0.011 | 0.663 | -0.004 | 0.725 | -0.123 | 0.170 |
| $MTB_{t-1}$ | 0.000 | 0.644 | 0.000 | 0.027 | -0.001 | 0.699 |
| $LEV_t$ | 0.009 | 0.494 | -0.005 | 0.094 | -0.071 | 0.169 |
| $FCF_t$ | -0.073 | 0.129 | 0.023 | 0.023 | -0.011 | 0.937 |
| $R\&D_t$ | 0.149 | 0.012 | 0.026 | 0.015 | 0.230 | 0.388 |
| $STOCK\ VOL_{t-1}$ | 0.022 | 0.023 | 0.004 | 0.061 | 0.048 | 0.209 |
| $EARN\ VOL_{t-1}$ | 0.000 | 0.544 | 0.000 | 0.473 | 0.000 | 0.022 |
| $BOARD\ SIZE_{t-1}$ | -0.002 | 0.016 | 0.000 | 0.381 | -0.005 | 0.356 |
| $PCT\ IND_{t-1}$ | -0.001 | 0.925 | -0.002 | 0.440 | -0.145 | 0.174 |
| $PCT\ BUSY\ IND_{t-1}$ | 0.005 | 0.355 | -0.001 | 0.522 | -0.039 | 0.478 |
| $CEO\ CHAIR_{t-1}$ | -0.005 | 0.062 | 0.001 | 0.203 | 0.029 | 0.145 |
| $NUM\ FIN\ EXPERTS_{t-1}$ | 0.001 | 0.413 | 0.000 | 0.829 | 0.014 | 0.212 |
| $LOGCASHCOMP_{t-1}$ | -0.001 | 0.250 | -0.001 | 0.011 | 0.002 | 0.615 |
| $LOGDELTA_{t-1}$ | -0.001 | 0.141 | 0.000 | 0.295 | -0.004 | 0.407 |
| $LOGVEGA_{t-1}$ | 0.000 | 0.913 | 0.000 | 0.174 | 0.000 | 0.947 |
| $R^2$ | 0.15 | | 0.25 | | 0.21 | |
| N (company-years) | 1,776 | | 1,776 | | 1,776 | |
| N (companies) | 233 | | 233 | | 233 | |

## TABLE 6

## Subsequent Effective Tax Rates of Clawback Adopters, Partitioned by Change in Accruals

This table reports OLS regression results of effective tax rates for clawback adopting companies that decreased accruals (Column 1) and companies that did not decrease accruals (Column 2). We define all variables in the appendix. For brevity, we do not report the intercept and the industry fixed effects. All *p*-values are two-tailed, and we cluster standard errors by company.

| | (1) | | (2) | |
|---|---|---|---|---|
| Dependent variable: | $ETR_t$ | | $ETR_t$ | |
| Sample partition: | Decrease in accruals | | No decrease in accruals | |
| Variable | Estimate | *p*-value | Estimate | *p*-value |
| $AFTER\ CLAWBACK_t$ | -0.023 | 0.000 | -0.008 | 0.170 |
| $ROA_t$ | 0.047 | 0.446 | 0.119 | 0.102 |
| $ACC_t$ | -0.171 | 0.030 | -0.210 | 0.040 |
| $RTM_t$ | 0.001 | 0.924 | -0.025 | 0.017 |
| $SIZE_{t-1}$ | -0.010 | 0.049 | -0.010 | 0.035 |
| $FI_t$ | -0.031 | 0.013 | -0.022 | 0.026 |
| $EQINC_t$ | 0.002 | 0.844 | -0.020 | 0.023 |
| $INTAN_t$ | 0.004 | 0.873 | 0.013 | 0.634 |
| $PPE_t$ | -0.049 | 0.216 | 0.008 | 0.837 |
| $NOL_t$ | 0.007 | 0.318 | -0.007 | 0.417 |
| $\Delta NOL_t$ | -0.005 | 0.935 | 0.026 | 0.812 |
| $MTB_{t-1}$ | 0.000 | 0.901 | -0.001 | 0.251 |
| $LEV_t$ | 0.004 | 0.902 | 0.050 | 0.077 |
| $FCF_t$ | -0.127 | 0.057 | -0.142 | 0.036 |
| $R\&D_t$ | -0.342 | 0.019 | -0.414 | 0.001 |
| $STOCK\ VOL_{t-1}$ | -0.029 | 0.192 | -0.008 | 0.703 |
| $EARN\ VOL_{t-1}$ | 0.000 | 0.332 | 0.000 | 0.083 |
| $BOARD\ SIZE_{t-1}$ | -0.001 | 0.696 | 0.003 | 0.195 |
| $PCT\ IND_{t-1}$ | -0.020 | 0.552 | -0.060 | 0.169 |
| $PCT\ BUSY\ IND_{t-1}$ | -0.012 | 0.499 | -0.005 | 0.762 |
| $CEO\ CHAIR_{t-1}$ | 0.009 | 0.307 | 0.007 | 0.489 |
| $NUM\ FIN\ EXPERTS_{t-1}$ | 0.000 | 0.911 | -0.003 | 0.424 |
| $LOGCASHCOMP_{t-1}$ | -0.001 | 0.599 | -0.003 | 0.075 |
| $LOGDELTA_{t-1}$ | 0.002 | 0.603 | 0.004 | 0.235 |
| $LOGVEGA_{t-1}$ | 0.000 | 0.852 | -0.003 | 0.183 |
| $R^2$ | 0.36 | | 0.36 | |
| N (company-years) | 1,023 | | 753 | |
| N (companies) | 133 | | 100 | |

## TABLE 7
## Subsequent Effective Tax Rates of Clawback Adopters, Partitioned by Clawback Type

This table reports OLS regression results of effective tax rates for clawback adopting companies that adopted robust clawbacks (Column 1) and companies that adopted other clawbacks (Column 2). We define all variables in the appendix. For brevity, we do not report the intercept and the industry fixed effects. All *p*-values are two-tailed and we cluster standard errors by company.

| | (1) | | (2) | |
|---|---|---|---|---|
| Dependent variable: | $ETR_t$ | | $ETR_t$ | |
| Sample partition: | Robust Clawbacks | | Misconduct Clawbacks | |
| Variable | Estimate | *p*-value | Estimate | *p*-value |
| $AFTER\ CLAWBACK_t$ | -0.023 | 0.001 | -0.013 | 0.040 |
| $ROA_t$ | 0.054 | 0.309 | 0.047 | 0.497 |
| $ACC_t$ | -0.179 | 0.036 | -0.172 | 0.069 |
| $RTM_t$ | 0.009 | 0.333 | -0.017 | 0.190 |
| $SIZE_{t-1}$ | -0.011 | 0.002 | -0.006 | 0.401 |
| $FI_t$ | -0.029 | 0.007 | -0.027 | 0.030 |
| $EQINC_t$ | -0.004 | 0.657 | -0.016 | 0.218 |
| $INTAN_t$ | -0.019 | 0.380 | 0.059 | 0.044 |
| $PPE_t$ | -0.048 | 0.167 | 0.040 | 0.371 |
| $NOL_t$ | 0.000 | 0.963 | 0.003 | 0.715 |
| $\Delta NOL_t$ | 0.041 | 0.604 | 0.015 | 0.815 |
| $MTB_{t-1}$ | -0.001 | 0.442 | 0.000 | 0.826 |
| $LEV_t$ | 0.024 | 0.358 | -0.011 | 0.724 |
| $FCF_t$ | -0.049 | 0.450 | -0.208 | 0.002 |
| $R\&D_t$ | -0.336 | 0.000 | -0.414 | 0.017 |
| $STOCK\ VOL_{t-1}$ | -0.013 | 0.556 | -0.025 | 0.244 |
| $EARN\ VOL_{t-1}$ | 0.000 | 0.267 | 0.000 | 0.013 |
| $BOARD\ SIZE_{t-1}$ | 0.001 | 0.691 | -0.001 | 0.710 |
| $PCT\ IND_{t-1}$ | -0.008 | 0.787 | -0.072 | 0.099 |
| $PCT\ BUSY\ IND_{t-1}$ | -0.006 | 0.693 | -0.006 | 0.742 |
| $CEO\ CHAIR_{t-1}$ | 0.007 | 0.364 | 0.007 | 0.490 |
| $NUM\ FIN\ EXPERTS_{t-1}$ | -0.005 | 0.074 | 0.000 | 0.930 |
| $LOGCASHCOMP_{t-1}$ | -0.001 | 0.608 | -0.005 | 0.011 |
| $LOGDELTA_{t-1}$ | 0.003 | 0.372 | 0.001 | 0.855 |
| $LOGVEGA_{t-1}$ | -0.003 | 0.192 | -0.001 | 0.614 |
| $R^2$ | 0.35 | | 0.40 | |
| N (company-years) | 952 | | 824 | |
| N (companies) | 123 | | 110 | |

## TABLE 8
## Subsequent Tax Volatility and Tax Disclosure of Clawback Adopters

This table reports OLS regression results of tax outcome volatility, and tax footnote disclosure attributes of clawback adopters. We define all variables in the appendix. For brevity, we do not report the intercept and the industry fixed effects. All *p*-values are two-tailed, and we cluster standard errors by company.

| | (1) | | (2) | | (3) | |
|---|---|---|---|---|---|---|
| Dependent variable: | $CV\_ETR_t$ | | $FOG_t$ | | $WORD\ COUNT_t$ | |
| Variable | Estimate | *p*-value | Estimate | *p*-value | Estimate | *p*-value |
| $AFTER\ CLAWBACK_t$ | -0.148 | 0.011 | -0.027 | 0.074 | 0.128 | 0.000 |
| $ROA_t$ | -1.122 | 0.049 | 0.214 | 0.236 | -0.767 | 0.036 |
| $ACC_t$ | 1.368 | 0.209 | -0.140 | 0.402 | -0.172 | 0.604 |
| $RTM_t$ | -0.026 | 0.669 | 0.002 | 0.932 | 0.006 | 0.918 |
| $SIZE_{t-1}$ | -0.066 | 0.125 | -0.022 | 0.035 | 0.046 | 0.107 |
| $FI_t$ | 0.223 | 0.068 | -0.044 | 0.104 | 0.226 | 0.000 |
| $EQINC_t$ | 0.165 | 0.117 | -0.001 | 0.971 | 0.065 | 0.233 |
| $INTAN_t$ | -0.141 | 0.438 | -0.020 | 0.659 | 0.010 | 0.929 |
| $PPE_t$ | -0.455 | 0.035 | -0.019 | 0.760 | -0.063 | 0.676 |
| $NOL_t$ | -0.126 | 0.257 | -0.051 | 0.002 | 0.118 | 0.006 |
| $\Delta NOL_t$ | 0.435 | 0.425 | 0.104 | 0.216 | -0.003 | 0.992 |
| $MTB_{t-1}$ | -0.016 | 0.198 | 0.002 | 0.709 | 0.003 | 0.617 |
| $LEV_t$ | 0.486 | 0.062 | -0.054 | 0.429 | -0.030 | 0.849 |
| $FCF_t$ | 0.757 | 0.375 | -0.167 | 0.364 | 0.202 | 0.547 |
| $R\&D_t$ | 5.495 | 0.019 | -0.538 | 0.011 | 1.816 | 0.002 |
| $STOCK\ VOL_{t-1}$ | 0.471 | 0.214 | 0.014 | 0.744 | 0.449 | 0.000 |
| $EARN\ VOL_{t-1}$ | 0.000 | 0.203 | 0.000 | 0.692 | 0.000 | 0.972 |
| $BOARD\ SIZE_{t-1}$ | -0.019 | 0.296 | -0.006 | 0.249 | -0.001 | 0.918 |
| $PCT\ IND_{t-1}$ | 0.703 | 0.073 | -0.213 | 0.053 | 0.646 | 0.001 |
| $PCT\ BUSY\ IND_{t-1}$ | 0.363 | 0.018 | 0.004 | 0.921 | 0.038 | 0.673 |
| $CEO\ CHAIR_{t-1}$ | -0.059 | 0.453 | 0.028 | 0.125 | -0.063 | 0.122 |
| $NUM\ FIN\ EXPERTS_{t-1}$ | -0.063 | 0.001 | -0.009 | 0.122 | 0.023 | 0.105 |
| $LOGCASHCOMP_{t-1}$ | 0.044 | 0.063 | 0.013 | 0.022 | -0.034 | 0.001 |
| $LOGDELTA_{t-1}$ | -0.033 | 0.210 | 0.013 | 0.069 | -0.028 | 0.074 |
| $LOGVEGA_{t-1}$ | -0.002 | 0.928 | -0.002 | 0.623 | 0.004 | 0.709 |
| $ETR_t$ | 0.398 | 0.533 | | | | |
| $R^2$ | 0.11 | | 0.23 | | 0.32 | |
| N (company-years) | 1,724 | | 1,628 | | 1,628 | |
| N (companies) | 233 | | 232 | | 232 | |