HKU BUSINESS SCHOOL 港大經管學院

HKU Jockey Club Enterprise Sustainability Global Research Institute

**Hong Kong University Business School:**
HKU Jockey Club Enterprise Sustainability
Global Research Institute Paper Series

# Tax-Related Disclosure Costs:
## Evidence from Redactions in Material Contracts

**Dichu Bao**
Lingnan University

**Linda A. Myers**
The University of Tennessee

**Lixin (Nancy) Su**
The Hong Kong Polytechnic University

# Tax-Related Disclosure Costs: Evidence from Redactions in Material Contracts

**Dichu Bao**
Department of Accountancy
Lingnan University
Hong Kong
dichubao@ln.edu.hk

**Linda A. Myers**
Department of Accounting & Information Management
Haslam College of Business
University of Tennessee, Knoxville
lmyers16@utk.edu

**Lixin (Nancy) Su**
School of Accounting and Finance, Faculty of Business
The Hong Kong Polytechnic University
Hong Kong
nancy.su@polyu.edu.hk

We thank Jennifer Blouin, Travis Chow, Scott Dyreng, Simon Fung, Zhaoyang Gu, Jeffrey Hoopes, Kelvin Law, Kenny Lin, Terry Shevlin, Han Stice, Donghui Wu, Harry Wu, two anonymous reviewers, and workshop participants from the Chinese University of Hong Kong, Fudan University, Lingnan University, Monash University, University of Hong Kong, and University of Melbourne for their helpful comments. We also thank Prof. Jeffrey Hoopes for sharing the IP address blocks used by the IRS to access EDGAR. Linda Myers gratefully acknowledges financial support from the Haslam Chair of Business at the University of Tennessee and Nancy Su gratefully acknowledges financial support from the Faculty of Business of The Hong Kong Polytechnic University.

# Tax-Related Disclosure Costs:
# Evidence from Redactions in Material Contracts

**Abstract**
The Internal Revenue Service (IRS) uses information in firms' public disclosures as well as private tax returns to detect tax noncompliance. Consistent with managers perceiving that material contracts contain information that could be useful to the resource-constrained IRS for its enforcement and that making redactions would reduce the likelihood of IRS audits, we find that firms facing greater ex-ante IRS scrutiny are more likely to redact material contract disclosure and redact more filings and contracts. Cross-sectionally, the positive association between IRS scrutiny and redactions in material contracts is stronger for firms with more uncertain tax positions, lower GAAP effective tax rates, and foreign subsidiaries. Redactions in material contracts are concentrated in contracts related to manufacturing and sales, investment, and intangibles, suggesting that managers perceive these contracts as useful for the IRS's enforcement activities. Greater redactions are also associated with lower likelihoods of a tax audit and of a tax settlement with the IRS. Overall, we provide novel evidence on the association between tax-related disclosure costs and firms' disclosures of general business information.

**Keywords:** confidential treatment; redaction; material contracts; tax-related disclosure costs; IRS scrutiny.

**Data Availability:** Data used in this study are available from public sources identified in the study.

## 1 Introduction

The United States (U.S.) Internal Revenue Service (IRS) monitors firms to determine 'true' taxable income and collect taxes. Specifically, the IRS scrutinizes firm tax positions and tax returns through a tax audit. However, the IRS is resource-constrained and cannot audit all firms (Mills 1998). These constraints have become more severe in the past decade because of significant budget cuts, causing the IRS to audit fewer tax returns and target returns and positions that it has greater confidence in winning (Nessa et al. 2020). To identify firms to audit, the IRS uses a proprietary model based on, but not limited to, firm tax returns. Prior literature finds that the IRS uses publicly disclosed information to supplement, corroborate, or clarify tax return information (Mills and Sansing 2000; Bozanic et al. 2017; Fox and Wilson 2023; Richter et al. 2024). Aware that the IRS uses public information, firms respond by strategically altering their disclosure decisions, resulting in an interesting interaction between firm disclosure and tax scrutiny (Blouin et al. 2010; Bozanic et al. 2017; Towery 2017; Ehinger et al. 2024).

Under Regulation S-K, the existence and terms (e.g., price, quantity, and milestone payments) of any contract must be disclosed if these contracts are material and not made in a firm's ordinary course of business. These material contract disclosures are a natural source of information that the IRS can use to evaluate firm compliance with tax rules. Consistent with the IRS using material contract disclosures in its evaluation process, Bozanic et al. (2017) finds that Exhibit 10 in Form 10-K, which describes material contracts, is routinely downloaded by the IRS from filings with the U.S. Securities and Exchange Commission (SEC), and that the number of IRS downloads is second only to downloads of "additional exhibits" in Exhibit 99.

Although Regulation S-K requires the disclosure of material contracts, before April 2019, U.S. securities laws allowed firms to seek confidential treatment and redact information from

material contracts by submitting confidential treatment requests to the SEC, providing that the redacted information was immaterial to investors and would cause competitive harm to the firm if disclosed.[1] In this study, we examine whether and how IRS scrutiny affects firm managers' material contract disclosure decisions. Specifically, we measure the (inverse) extent of material contract disclosure using redactions made via confidential treatment requests.

It is unclear ex-ante whether IRS scrutiny leads to more or fewer material contract redactions because managers trade off the costs and benefits of (non)disclosure when facing IRS scrutiny.[2] On the one hand, the IRS uses public information to support its enforcement efforts. According to Richter et al. (2024), 89 percent of interviewed tax executives believe that the IRS seeks out information from sources other than tax returns, with most believing that the IRS reviews periodic filings. Chen et al. (2021) finds that IRS downloads of 10-Ks increased after the adoption of XBRL, suggesting that the IRS relies more on public financial disclosures when information is more accessible and easier to process. In our setting, managers may perceive that redactions in material contracts reduce the amount of public information accessible to the IRS, making the redacting firm a more difficult IRS target.[3] If so, firm managers could rationally assume that, all else equal, the IRS is less likely to audit redacting firms, which incentivizes firms that are more likely to face IRS scrutiny to redact material contract disclosures. In this way, we argue that tax-related disclosure costs could lead to redactions. On the other hand, unlike other types of

[1] Rule 406 of the Securities Act of 1933 and Rule 24b-2 of the Securities Exchange Act of 1934 govern requests for confidential treatment. Companies often rely on the Freedom of Information Act (FOIA) exemption provided in 5 U.S.C. § 552(b)(4) (Exemption 4), which protects "trade secrets and commercial or financial information obtained from a person [that is] privileged or confidential" to redact terms from a contract.

[2] Shevlin et al. (2017) posits that managers alter their level of tax avoidance based on their perceived probability of tax enforcement. Following similar logic, we argue that managers assess the probability of IRS enforcement and strategically alter disclosure by making redactions in material contracts.

[3] Consistent with this belief, our anecdotal conversations with an IRS auditor indicate that if it appears too difficult for the IRS to gather information, the IRS often chooses not to pursue the case. Moreover, Microsoft's challenge of an IRS summons related to its cost-sharing arrangements indicates that it can be costly for the IRS to obtain contract information. See https://www.casemine.com/judgement/us/5914f16aadd7b0493497b0c9.

nondisclosure where the IRS and investors would be uncertain about whether firm managers possess the information, redactions in material contracts clearly indicate that information exists but is withheld. This clear evidence of information withholding may serve as a "red flag" to the IRS and increase the probability of a tax audit, especially if the IRS can easily unravel that the incentive for redactions is to evade tax scrutiny rather than to protect proprietary information. To preempt undesired IRS attention, firms facing a higher likelihood of IRS scrutiny may make fewer redactions. In addition, because redactions increase information asymmetry between firms and investors (Verrecchia and Weber 2006; Barth et al. 2023), general disclosure incentives to meet investor demands for information may mitigate managers' tendency to redact material contracts. In sum, whether IRS scrutiny affects material contract redactions is an empirical question.

Because firm-level IRS audits are not publicly observable, we follow Hoopes et al. (2012), Hanlon et al. (2014), and Bauer et al. (2021) and use annual IRS audit rates by IRS firm-asset-size group to proxy for ex-ante IRS scrutiny. These audit rates are calculated as the number of face-to-face corporate tax return audits completed by the IRS for an asset-size group in a year, divided by the number of returns received from firms in the same asset-size group in the previous year. Prior research suggests that the IRS audit rate is a good proxy for ex-ante IRS scrutiny (Hoopes et al. 2012; Bauer et al. 2021) and uses these rates to capture managers' expectations of being audited.

To validate the premise that material contracts contain information relevant to firms' tax activities and are useful for IRS enforcement, we first show that IRS downloads of a firm's material contracts are associated with its tax-related characteristics. Specifically, IRS material contract downloads are negatively associated with effective tax rates calculated using income under generally accepted accounting principles (GAAP ETRs), and positively associated with

unrecognized tax benefits and the presence of foreign subsidiaries.[4] This evidence suggests that the IRS pays more attention to material contracts when firms likely engage in tax avoidance. The results are also consistent with beliefs expressed by tax executives in Richter et al. (2024) that the IRS seeks out information from sources other than tax returns.

We then classify material contracts into seven categories, based on the classifications in Verrecchia and Weber (2006) and Boone et al. (2016). We find that relative to the proportions of different contract types, the IRS downloads more manufacturing and sales contracts, investment contracts, and intangible contracts. The counts of IRS downloads for these contract types are also positively associated with our primary measure of IRS scrutiny, consistent with the notion that these contracts are more likely to discuss business transactions that bear tax implications (e.g., purchase and sales agreements, mergers and acquisitions (M&As) and reorganizations, research and development (R&D), and license agreements).

We next test whether firms' redactions increase in ex-ante IRS scrutiny. Before 2019, firms were required to submit confidential treatment requests to the SEC if they desired to redact information from material contracts. To identify these requests, we use confidential treatment orders (CTOs). CTOs disclose the SEC's decisions regarding whether to grant, require amendments, or reject confidential treatment requests.[5] For each firm-year in our sample, we use an indicator variable to represent the incidence of redaction and we use two count variables – one that counts the number of filings with redactions and one that counts the number of material contracts (which are filed as separate exhibits) with redactions. Our sample period is from 2009 through 2018 because CTOs are publicly available during these years.

[4] These determinants are consistent with findings in Bozanic et al. (2017), which studies IRS downloads of 10-Ks.
[5] Our sample of "redactions" includes all confidential treatment requests, regardless of the SEC's decision, because our research question relates to managers' redaction decisions rather than the outcomes of redactions. Moreover, denials are very rare (occurring in less than 0.5% of all confidential treatment requests).

We find that other than for the largest two IRS firm-asset-size groups, which are very often audited, there is an almost monotonic relation between IRS audit rates and redactions. After removing the largest asset-size group, which is almost certain to be audited, we find that a higher IRS audit rate for a firm's IRS asset-size group is associated with a greater likelihood of the firm redacting, with more redacted filings, and with more redacted material contracts. To help triangulate that the exogenous variation in audit rates over time is associated with firms' redaction behaviors, we also conduct tests using the subsample of firms that have ever made redactions in our sample period. Again, the results support our argument that tax-related disclosure costs lead to redactions in material contracts. We then conduct cross-sectional tests based on tax-related variables associated with IRS material contract downloads and with tax-related disclosure costs. We find that the positive relation between IRS audit rates and redactions is more pronounced for firms with more uncertain tax positions, lower GAAP ETRs, and foreign subsidiaries.[6]

We next adopt alternative IRS scrutiny measures from prior literature. We find that firms headquartered closer to IRS regional offices (Kubick et al. 2017) are more likely to redact. We also use the IRS exposure measure in Armstrong et al. (2024) and find that greater IRS exposure is associated with a higher likelihood of redaction and more redactions. In addition, using IRS audit rates based on district-year and district-size-year groups available before 2001 and an alternative sample from 1994 through 2000, we continue to find a positive association between redactions and IRS audit rates. Finally, our main inferences survive a battery of other robustness tests, and results from a placebo test that randomly assigns the actual audit rates across years to the same IRS firm-asset-size groups provide confidence that exogenous variation in audit rates

[6] Consistent with the reasoning that when firms face less competition, the IRS is more likely to unravel that redactions are to avoid IRS scrutiny rather than to protect proprietary information, rendering redactions less effective, we find that the positive relation documented in our main tests is fully mitigated for firms facing less product market competition.

over time, rather than size-related omitted variables, leads to the variation in redactions.

Our main findings suggest that tax-related disclosure costs deter material contract disclosure so we expect proportionally more redactions in material contracts that discuss business transactions that bear tax implications. Consistent with this expectation, we find positive relations between IRS audit rates and redactions in manufacturing and sales contracts, investment contracts, and intangible contracts. We also find positive relations between IRS audit rates and redactions in employment contracts and credit or lease contracts. In contrast, we find no such relations for contracts related to stockholders and the 'other' category, which should have little bearing on IRS scrutiny.

Next, we exploit two exogenous shocks. First, we exploit the staggered adoption of the Uncertain Tax Position Statement (Schedule UTP), which increases the amount of firm-specific information privately available to the IRS, and we examine whether firms make fewer redactions when Schedule UTP is available to the IRS. We find that relative to control firms not subject to Schedule UTP reporting requirements, treated firms make fewer redactions in the post-UTP period. Second, we exploit the 2013 IRS budget cut to test whether fewer IRS resources, which should negatively affect expected IRS scrutiny, reduce firm redactions. We find that firms with high pre-budget cut IRS exposure, which are most likely to be affected by the budget cut, redact material contracts less frequently following the budget cut.

Lastly, we measure ex-post IRS enforcement using the mentioning of a tax audit in firms' 10-Ks and tax settlements disclosed under FIN 48, and we test whether material contract redactions reduce ex-post tax enforcement. We find that redactions are associated with lower likelihoods of a tax audit and of a tax settlement, suggesting that material contract redactions reduce tax-related disclosure costs.

Our study makes two main contributions to the literature. First, prior redaction studies view protecting proprietary information from competitors (Boone et al. 2016; Glaeser 2018) as the primary motive for redaction requests. We contribute to this literature by documenting a tax-related motive for redactions (i.e., to reduce IRS scrutiny). Our findings have important implications for SEC rulemaking because the SEC recently removed the "competitive harm" requirement for "confidential" information under FOIA, Exemption 4, and removed the requirement for in-advance requests for confidential treatment under the Fixing America's Surface Transportation (FAST) Act.[7] Thompson et al. (2023) shows that the removal of in-advance requests enables firms to redact more information that is economically material to investors. Our findings suggest that this new redaction rule provides firms with more opportunities to redact information to avoid IRS scrutiny. Because we find that SEC regulations can impose externalities on the IRS (also see findings in Blouin et al. (2010) and Kubick et al. (2016)), the SEC may wish to consider the broader impact of regulatory changes when setting disclosure requirements.

Second, we add to the literature on tax-related disclosure costs (McGuire 2009; Hope et al. 2013; Robinson and Schmidt 2013; Bozanic et al. 2017; Towery 2017; Inger et al. 2018; Chychyla et al. 2022; Ehinger et al. 2024). Different from these studies, which examine the disclosure of tax-specific information (e.g., tax footnotes, tax position disclosures, ETRs), we focus on the disclosure of general business information (i.e., material contract disclosure) where nondisclosure is not obviously tax-motivated. In addition, unlike other tax disclosures, redactions in material contracts provide a clear indication of information withholding. We show that material contract disclosures are an important source of information for the IRS and bear tax-related disclosure costs,

[7] See https://www.sec.gov/resources-small-businesses/small-business-compliance-guides/fast-act-modernization-simplification-regulation-s-k and "SEC eliminates 'competitive harm' requirement in streamlined process for confidential treatment" in *Cooley PubCo* (December 7, 2020), available at https://cooleypubco.com/2020/12/07/sec-eliminates-competitive-harm-confidential-treatment/.

and that some firms redact when facing high IRS scrutiny. Therefore, this study expands our understanding of the disclosure decisions that firms make when facing tax-based proprietary costs. Our evidence that redaction reduces ex-post IRS enforcement also answers the call in Richter et al. (2024) for research examining the association between public disclosures and IRS audit outcomes.

## 2 Prior literature and the research question

### 2.1 Literature on tax-based proprietary costs

In the absence of disclosure costs, value-maximizing managers commit to full disclosure because rational market participants infer that nondisclosure signals the worst outcome (Grossman 1981; Milgrom 1981), leading them to price-protect themselves (Wurgler 2000). Following Verrecchia (1983), which contends that disclosure costs prevent full disclosure, numerous empirical studies show that nondisclosure occurs to conceal proprietary information from competitors (see, for example, Verrecchia and Weber 2006; Ellis et al. 2012; Huang et al. 2017; Cao et al. 2018). This generates competitor-related proprietary costs.

The IRS requires that firms regularly submit tax returns and can choose to assess whether they have accurately reported their tax liabilities. To facilitate its assessment, the IRS also seeks out publicly available information, including financial disclosures required by the SEC (Hope et al. 2013; Bozanic et al. 2017; Richter et al. 2024). Although these disclosures are aimed at providing information to investors and increasing transparency, they can be used by the IRS in its pre-audit and enforcement processes, imposing tax-based proprietary costs on disclosing firms.[8]

Prior literature focuses on tax-specific disclosures to examine the impact of tax-based

[8] The costs of a tax audit include more potential taxes, interest, and penalties, as well as up front resources and time devoted to dealing with the tax audit. These latter costs could include engaging outside counsel to help defend challenged positions or the opportunity costs generated when deploying internal company resources to respond to auditor requests (Seidman et al. 2024).

proprietary costs. For example, McGuire (2009) finds that managers are less likely to explain fourth-quarter decreases in GAAP ETRs when those decreases are more likely to be attributable to proprietary tax planning strategies. Robinson and Schmidt (2013) finds less complete inaugural FIN 48 disclosures for firms that engage in higher levels of tax avoidance. Similarly, Inger et al. (2018) documents a negative association between tax avoidance and the readability of the income tax footnote for firms engaged in high levels of tax avoidance relative to industry peers. After the implementation of Schedule UTP, Bozanic et al. (2017) finds that firms required to disclose uncertain tax positions provide more tax footnotes, but Towery (2017) finds that firms report lower reserves of uncertain tax benefits to avoid disclosure requirements. Chychyla et al. (2022) shows that tax-aggressive firms are less likely to provide dollar-format tax reconciliation tables or to explicitly mention ETRs in 10-Ks. Ehinger et al. (2024) finds that firms facing more intense IRS monitoring mention income taxes less and are more brief when discussing taxes in conference calls and earnings announcements. Finally, Richter et al. (2024) finds that tax footnotes are more vague than other footnotes and that tax footnote vagueness is increasing in tax-based proprietary costs.

Although these papers find that firms provide less disclosure when tax-based proprietary costs are high, firms must trade off tax-based proprietary costs and investors' information demands when making tax-related disclosure decisions. Accordingly, Balakrishnan et al. (2019) shows that tax-aggressive firms provide more tax-related disclosures to mitigate transparency problems associated with tax avoidance and Luo et al. (2024) finds that tax footnote disclosures can yield capital market benefits in terms higher market valuations. Finally, Lewellen (2023) shows that the relation between tax-haven incorporation and financial reporting transparency varies with corporate governance.

Tax authorities can also benefit from disclosures of general business information. For

example, subsidiary disclosures in Exhibit 21 contain information about the firm's geographic footprint that can help tax authorities determine the jurisdiction where income should be taxed (Hope et al. 2013; Dyreng et al. 2020). To reduce tax authorities' access to geographic information, firms strategically change foreign subsidiary disclosures (Dyreng et al. 2016; Dyreng et al. 2020). In addition, details about significant business transactions can offer insights into the tax consequences of events like mergers and acquisitions (M&As) and reorganizations (Richter et al. 2024). Because material contract disclosure can be useful to the IRS, as evidenced by the large number of IRS downloads of Exhibit 10 (Bozanic et al. 2017), we examine whether tax-related motives affect redactions in material contracts.

Despite the abundant tax-related disclosure cost literature discussed above, our paper differs from prior studies in two important ways. First, whereas prior studies primarily examine tax-specific disclosures (e.g., Bozanic et al. (2017) focuses on tax footnotes and Towery (2017) examines reserves for uncertain tax positions), we focus on disclosure of general business information that is not obviously related to firms' tax activities. Second, unlike other tax disclosures, redactions in material contracts clearly indicate that information exists but is being withheld. This clear indication of information withholding may trigger the IRS to request material contracts, which makes redaction a less effective strategy to avoid IRS scrutiny. Therefore, whether tax-related disclosure cost deters material contract disclosures is an empirical question.

**2.2 Background and literature on material contract redactions**

U.S. securities laws require public firms to disclose in SEC filings all contracts deemed material. Specifically, Regulation S-K requires the public disclosure of "[e]very contract not made in the ordinary course of business which is material to the registrant."[9] However, according to

[9] "Material" in SEC regulations limits the required disclosure of information to those matters that a reasonable investor is likely to find important in determining whether to buy or sell registered securities (see 17 C.F.R. 240.12b-2 (1990)).

Rules 406 and 24b-2 of the securities laws, firms can redact information from material contracts by submitting confidential treatment requests to the SEC, providing that the redacted information is not material and would be competitively harmful if publicly disclosed.[10] Effective April 2019, the SEC amended Regulation S-K and allowed firms to redact information without submitting confidential treatment requests in advance. Moreover, effective March 2021, the SEC replaced the competitive harm requirement with a standard that permits immaterial information to be redacted from material contracts if it is the type of information that the issuer customarily and actually treats as private and confidential. The redacted information usually includes pricing terms, technical specifications, and information about milestone payments. Redactions are often used to protect proprietary information from competitors (Boone et al. 2016; Glaeser 2018; Chen et al. 2022) but Bao et al. (2022) shows that firms also make redactions to hide bad news, supporting both proprietary-cost- and agency-cost-based motives for nondisclosure (Bens et al. 2011). In contrast to these studies, we focus on a tax-related motive for redactions.

Prior research also examines the effects of redactions on firms' information environment. Verrecchia and Weber (2006) shows that redactions in material contracts are associated with larger bid-ask spreads, reduced market depth, and lower market turnover. Boone et al. (2016) examines redactions in registration statements prior to initial public offerings (IPOs) and finds that these redactions result in greater information asymmetry measured by IPO underpricing. In addition, redacting firms' stock price discovery process is slower (Thompson et al. 2023) and their cost of

[10] Note that there is no definition of material information under Rule 406 or 24b-2. Upon receiving a firm's request for confidential treatment, the SEC reviews the information and either approves the request, requires an amendment, or rejects the request. Rejections are extremely rare. In these cases, firms must re-file unredacted versions of their material contracts. The SEC can also partially reject requests and require amendments. In these cases, firms must amend their material contract filings to release some of the previously redacted information. Thompson (2022) shows that these outcomes can be affected by the firm's political connections and congressional intervention.

equity capital is higher (Bao et al. 2024). These capital market consequences suggest that managers should consider the costs, as well as benefits, when making redaction decisions.

**2.3 The research question and prediction**

Transactions involving purchases and sales of goods or services, investments such as purchases and sales of assets, M&As and reorganizations, R&D, and the licensing of intellectual property (i.e., patents and formulas) can have tax consequences. Specifically, purchases and sales involve price terms that can be arranged to reduce the tax burden. M&As and reorganizations can be tax-free or taxable depending on the features of these transactions, which can be gleaned from transaction details. Certain R&D expenses qualify for tax credits,[11] and some companies enter into collaborative partnerships to develop products or intellectual property that can be accounted for as sales or licensing, with significant tax implications. In summary, contract details, such as pricing terms, royalty rates, sales quantities, milestone payments, and other details can complement IRS tax filings and help the IRS detect tax noncompliance. In fact, Bozanic et al. (2017) documents that the IRS's second most downloaded 10-K exhibits from EDGAR are material contracts, following only generic "additional exhibits" (Exhibit 99), indicating that material contract disclosures bear tax-related disclosure costs. Appendix A provides an example of a redacted contract.

When allocating its limited enforcement resources, the IRS determines how many and which returns to audit, the scope of its audits, and the amount of resources to dedicate to collecting proposed deficiencies (Nessa et al. 2020). In addition to tax returns, the IRS uses public disclosures in its enforcement (Richter et al. 2024), with material contracts being one important information source (Bozanic et al. 2017). If redactions in material contracts reduce the amount of public

[11] I.R.C. § 41 requires examiners to request and review research contracts to determine the amount of research expenses eligible for tax credit.

information easily accessible to the IRS, it must acquire information from the firm or from other sources, increasing enforcement costs.[12] Rational managers will perceive that, all else equal, the IRS is less likely to select redacting firms when deciding which firms to audit. This should incentivize firms with a high ex-ante likelihood of IRS scrutiny to redact information in material contracts.[13] Moreover, material contract disclosures could enable other parties without access to IRS tax filings to identify tax avoidance activities and inform the IRS, leading to IRS enforcement.[14] If redactions in material contracts can lower the likelihood of other parties detecting firms' tax avoidance activities, then firms may be incentivized to withhold material contract information.

Alternatively, because redactions in material contracts clearly indicate that information is withheld, managers may believe that redactions can raise IRS suspicion and serve as a "red flag." In this case, redactions would attract more IRS scrutiny, making redacting firms potential suspects for tax noncompliance. Moreover, when firms do not have much proprietary information to protect, the IRS could easily unravel that any redaction is intended to avoid IRS scrutiny, leading the IRS to focus more on redacting firms. Anticipating heightened scrutiny, firms could choose to redact less.[15] Overall, it is not clear ex-ante whether managers redact more or less information from material contracts in the face of IRS scrutiny.

---

[12] The IRS is limited in terms of the information that it can obtain from firms. Managers can strategically withhold information during a tax audit (Seidman et al. 2024) and they can challenge IRS requests. See, for example, https://www.casemine.com/judgement/us/5914f16aadd7b0493497b0c9.

[13] Firms also arrange related party transactions to shift or reduce income taxes. However, these transactions are not eligible for confidential treatment (Saavedra 2023). Because related party transactions are a major source of tax planning and cannot be redacted, managers cannot withhold information from all contracts that have tax implications through redactions.

[14] Our logic here is similar to that in Hope et al. (2013, 174), which argues that because IRS audits could be triggered "by complaints of citizen groups or criticisms in the business press, non-disclosure could decrease the ability of these financial statement users to inform the IRS of firms' tax avoidance activities."

[15] The same logic applies to U.S. firms that are assigned to the Coordinated Industry Case (CIC) program and thus are continually under IRS audits (Hanlon et al. 2007; Ayers et al. 2019). Here, the processing costs for the IRS in auditing these firms will be low, rendering redaction less effective. Therefore, we conjecture (and find) that CIC firms are less likely than other firms to redact material contracts.

Finally, firms disclose information to meet the demands of investors and other stakeholders (Bhojraj et al. 2004). Therefore, managers must balance the costs and benefits of a disclosure that is used by multiple parties (Richter et al. 2024). Incentives to provide general disclosure to meet investor information demand can also prohibit managers from redacting.

## 3 Data and sample

### 3.1 Redactions in material contracts through confidential treatment requests

Firms file material contracts as Exhibit 10s in their SEC filings. These SEC filings include annual reports filed on Form 10-K, quarterly reports filed on Form 10-Q, other reports filed on Form 8-K, and registration statements. Before 2019, when a firm intended to redact information from a material contract in an SEC filing, it was required to submit a confidential treatment request outlining the factual and legal justifications for redacting specific contract terms. Upon receiving the SEC's approval, the redacted information was exempted from public disclosure for the time period listed in the CTO. Since May 1, 2008, the SEC has disclosed CTOs on the EDGAR website. These CTOs indicate which firm applied for confidential treatment, and for which filing and exhibit(s), as well as the initial filing date of the document with the confidential treatment request.[16] Because a firm may redact information from multiple contracts (which are filed as separate exhibits) in one SEC filing, we count the number of filings and the number of contracts with redactions.

In April 2019, the SEC streamlined its approach to confidential treatment as part of the FAST Act Modernization and Simplification of Regulation S-K. Under the new approach, firms no longer need to submit formal confidential treatment requests in advance. Because of this, our sample of confidential treatment requests ends in February 2019. To construct our sample, we downloaded all CTOs issued from May 2008 through February 2019 from the EDGAR website. For

[16] Bao et al. (2022) provides examples of confidential treatment requests that the SEC grants, requires amendments of, or rejects.

each CTO, we collected the name of the registrant filing the request, the form type (i.e., Form 10-K, 10-Q, 8-K, or registration statement), the contracts (e.g., Exhibit 10.xx for material contracts) subject to confidential treatment, as well as the initial filing date.[17] Because firms apply for confidential treatment when they file the required SEC filing, the initial filing date is the date of the confidential treatment request. We align the date of the request with the ex-ante likelihood of an IRS audit.

Appendix B presents our procedure for identifying the sample of confidential treatment requests. To form the sample, we start with those filed between January 2009 and December 2018, inclusive. The sample period begins in 2009 because this is the first full year for which CTOs, which list the confidential treatment requests, are available. It ends in 2018 because this is the last full year during which firms needed to submit in-advance applications for confidential treatment.[18] Dropping requests with a missing filing-form type or a missing exhibit link yields confidential treatment requests for 22,779 material contracts in 10,106 filings during our sample period (see Step 1). To avoid duplicate observations, we exclude extensions of previously granted confidential treatment requests, resulting in confidential treatment requests for 19,966 contracts in 10,033 filings (Step 2). Because material contracts are filed primarily as exhibits in 8-Ks and periodic filings, we follow Park et al. (2019) and Heinle et al. (2023) and focus on the requests to redact information in these filings, which further reduces the sample of confidential treatment requests to 15,331 contracts in 8,736 filings (Step 3).[19] We then merge these requests with the firm-year observations described below, using the filing date of the request (Steps 4 and 5). This results in a sample of confidential treatment requests for 3,703 contracts in 1,954 filings.

[17] The most common SEC filings with confidential treatment requests are 10-Qs (38.31%), 10-Ks (21.37%), S-1s (14.96%), and 8-Ks (11.86%).
[18] Firms can still submit confidential treatment requests after April 2019 but most CTOs issued after April 2019 are either extensions of previously granted requests or requests filed before April 2019 (Thompson et al. 2023, fn 3).
[19] This step eliminates redaction requests in 20-Fs made by foreign private issuers and those in registration statements such as S-1 Initial Public Offering prospectuses because foreign firms cross-listed in the U.S. are not subject to IRS scrutiny and newly listed firms do not face the same level of IRS scrutiny as seasoned firms.

### 3.2 Sample construction

To construct the sample of firm-year observations that we use in our tests, we start with all firm-year observations in Compustat with non-missing SIC code and total asset data from 2009 through 2018. We follow Hoopes et al. (2012) and Bauer et al. (2021) and limit the sample to firms incorporated and headquartered in the U.S. because foreign firms and firms headquartered outside of the U.S. face less IRS scrutiny. We further exclude financial and utility firms (SIC codes 4900-4999 and 6000-6999) because these firms are subject to oversight from other regulatory bodies and bear other types of regulator-related disclosure costs that could affect their redaction decisions. Following Hoopes et al. (2012) and Hope et al. (2013), we remove firms with negative pretax income. After excluding observations with missing financial and stock return data, our full sample includes 13,817 firm-year observations. Table 1, Panel A, reports the number of observations for each IRS firm-asset-size-group-year intersection. The sample observations are evenly distributed across years, and the proportion of observations first increases and then decreases with IRS firm-asset-size group.

### 3.3 Measuring IRS scrutiny

Data on IRS enforcement (i.e., tax audits for individual firms) are not publicly available. To circumvent this data limitation, prior research uses aggregate IRS audit rates by IRS firm-asset-size groups from the Transaction Records Access Clearinghouse (TRAC) to measure IRS scrutiny (Hoopes et al. 2012; Hanlon et al. 2014; Bauer et al. 2021). The TRAC obtains actual audit data from the IRS Data Book published annually on the IRS website. For each sample year, these data indicate the number of face-to-face audits of corporate income tax returns as well as the number of returns received for each IRS firm-asset-size group. Our measure of IRS scrutiny, *IRS_AUDIT_RATE*, which is calculated each year for each IRS firm-asset-size group, is the number of corporate tax returns for a given IRS firm-asset-size group audited by the IRS in the fiscal year

divided by the number of corporate tax returns received from firms in the same IRS firm-asset-size group in the previous year, multiplied by 100.[20] This measure should reflect managers' perception of ex-ante IRS scrutiny because many use tax audit rates disclosed by the IRS to assess the likelihood of being audited (Hoopes et al. 2012; Hanlon et al. 2014; Bauer et al. 2021).[21] *IRS_AUDIT_RATE*, which varies by firm size, year, and size-year interaction, is exogenous because a single firm will not affect the IRS's audit decision for the entire asset-size group. Table 1, Panel B, reports IRS audit rates by year for each firm-asset-size group.[22] The overall IRS audit rates increase in the first few years of our sample period and then they decrease. They also increase almost monotonically with firm size.

**3.4 Research design**

To test whether ex-ante IRS scrutiny positively or negatively affects redactions in material contracts, we estimate the following regression:

$$REDACT_{i,y} = \alpha + \beta IRS\_AUDIT\_RATE_{i,y} + c'Controls_{i,y} + Size\ group\ fixed\ effects + Industry\ fixed\ effects + Fiscal\ year\ fixed\ effects + \varepsilon_{i,y} \quad (1)$$

where subscripts *i* and *y* denote the firm and year, respectively. We use an indicator and two count variables to measure redactions in material contracts: *REDACT_D* is an indicator variable equal to 1 if the firm makes at least one redaction in the year, and 0 otherwise; *REDACT_FILE* (*REDACT_CNT*) is the number of filings (contracts) with redactions in the year. The dependent variable *REDACT* is either *REDACT_D*, *REDACT_FILE*, or *REDACT_CNT*. When the dependent variable is *REDACT_D*,

[20] IRS audits are usually completed within one year (Hoopes et al. 2012) and "examination is associated with returns filed in the previous year" (IRS 2008).

[21] In fact, Hoopes et al. (2012) finds that 31 percent of surveyed tax directors who indicate that they assess the probability of being audited by the IRS when making tax decisions explicitly state that they use past audit rates disclosed by the tax authorities to assess this probability.

[22] The IRS also provides audit data for groups of firms with total assets of less than $0.25 million, $0.25-$1 million, and $1-$5 million. Because our sample includes only firms with assets greater than $5 million, we do not tabulate the audit rates for these groups.

we estimate Eq. (1) using logit regression, and when the dependent variable is a count variable (*REDACT_FILE* or *REDACT_CNT*), we use Poisson regression. Our main variable of interest is *IRS_AUDIT_RATE*. $\beta$ will be positive (negative) if firms facing greater IRS scrutiny make more (fewer) redactions.

We control for tax-related disclosure costs using GAAP ETRs (*GAAPETR*), tax uncertainty measured by unrecognized tax benefits (*UTB*), and the presence of foreign subsidiaries (*FOREIGN*).[23] Because firms make redactions to protect proprietary information from competitors (Boone et al. 2016; Glaeser 2018), controlling for competition-related disclosure costs is important. We follow Boone et al. (2016) and measure competition using the firm-specific fluidity measure (*FLUIDITY*) constructed in Hoberg et al. (2014). *FLUIDITY* measures how quickly the firm's product markets are changing.[24] We next control for the following firm characteristics that are associated with IRS enforcement (Bozanic et al. 2017) and with firms' redaction decisions (Verrecchia and Weber 2006; Glaeser 2018): R&D expenditures (*R&D*), capital expenditures (*CAPX*), intangible intensity (*INTANGIBLE*), and capital intensity (*CAP_INT*). We control for firm size (*Ln(SIZE)*) because disclosure decisions and IRS audit rates vary with firm size, and we use the market-to-book ratio (*MTB*) to control for growth opportunities. Because the likelihood of violating debt covenants can affect firms' disclosure incentives (Bourveau et al. 2022), we control for leverage (*LEV*). Verrecchia and Weber (2006) finds that poorly performing firms redact information from 10-Ks to reduce litigation risk and Bao et al. (2022) finds that firms with private negative information redact material contract disclosure to withhold bad news from investors. Therefore, we control for return on assets (*ROA*) and stock return over the past 12 months (*RETURN*).

[23] As later tests show, these variables are significantly associated with IRS downloads of material contracts.
[24] We obtain the fluidity measure from the Hoberg-Phillips data library, available at http://hobergphillips.tuck.dartmouth.edu/.

We control for stock return volatility (*RETVOL*) because disclosure decisions are likely to be influenced by firm-specific risk (Waymire 1984), and because prior studies find that disclosure is affected by analyst following (Lang and Lundholm 1996; Anantharaman and Zhang 2011) and institutional ownership (Bushee and Noe 2000; Boone and White 2015), we control for the number of analysts following the firm (*Ln(ANALYST)*) and institutional ownership (*IO*). In addition, we control for the count of 8-Ks, 10-Ks, and 10-Qs (*Ln(NUM_FILE)*) or for the count of material contracts (i.e., Exhibit 10s) in these filings (*Ln(NUM_CNT)*) in the year. These latter variables control for any mechanical relation between the number of filings or the number of material contracts and the frequency of confidential treatment requests.

As discussed in fn 15, the U.S. firms assigned to the CIC program are subject to certain annual audits (Hanlon et al. 2007; Ayers et al. 2019). These firms have weaker incentives to avoid IRS enforcement by redacting material contracts. Therefore, we include an indicator variable for potential CIC firms to control for the impact of audit certainty on firms' redaction decisions.[25] Because the list of CIC firms is proprietary, we compute a firm's probability of belonging to the CIC program using the logit regression model from Table 3, Panel A, Column (1) of Ayers et al. (2019). *CIC* is an indicator variable equal to 1 if the observation's probability of being in the CIC program is greater than 0.5, and 0 otherwise. Finally, because IRS audit rates are reported based on IRS firm-asset-size groups, we include indicator variables representing the IRS firm-asset-size groups listed in Table 1. This controls for any mechanical relation between the probability of an IRS audit and firm size. We also include industry fixed effects and fiscal year fixed effects.

All variables are defined in Appendix C. We winsorize continuous variables at their 1st and

[25] We also estimate Eq. (1) for CIC and non-CIC firm-year observations separately. We find that IRS audit rates are positively and significantly associated with redactions only for the non-CIC subsample. These results are consistent with our expectation that CIC firms are unlikely to redact material contract disclosures to avoid IRS scrutiny.

99th percentiles to reduce the impact of outliers, and we use standard errors clustered at the firm level to mitigate deflation in standard errors caused by within-firm correlation over multiple years.

## 4 Empirical results

### 4.1 IRS downloads of material contracts

Our research question is based on the premise that material contracts are useful for the IRS's enforcement activities and therefore bear tax-related disclosure costs. This premise is supported by tax executives' beliefs documented in Richter et al. (2024) that the IRS uses public disclosures in its enforcement activities. For the sample of firm-year observations with non-missing control variables and available EDGAR log files from 2009 through June 2017,[26] we find that the IRS downloads Exhibit 10s (material contracts) 5,570 times.[27]

We first test for a relation between IRS material contract downloads and firms' tax-related variables. Specifically, for our sample firms, we regress the count of IRS material contract downloads on the tax-related variables and on other firm characteristics from Bozanic et al. (2017). Table 2, Panel A, reports the regression results. We find that the count of IRS material contract downloads is negatively associated with GAAP ETRs (*GAAPETR*), and positively associated with tax uncertainty (*UTB*), and the presence of foreign subsidiaries (*FOREIGN*). This evidence suggests that the disclosure of material contracts generates tax-related disclosure costs, and these costs increase with the firm's level of tax avoidance, uncertain tax positions, and foreign

[26] The SEC stopped making EDGAR server log files with IP addresses public after June 2017. Although it resumed making log files public in May 2020, it removed IP addresses, preventing the identification of IRS downloads after June 2017.

[27] In contrast, the IRS downloads Exhibit 21s (subsidiary disclosures) only 2,723 times. Given that firms provide an average of 5.6 Exhibit 10s per year (68,451 exhibits from Table 2, Panel B / 12,121 observations from Panel A) and file only 1 Exhibit 21 attached to Form 10-K, these results indicate that Exhibit 10s *do* draw the IRS's attention, although less so than Exhibit 21s.

footprint.[28]

We then classify the material contracts into seven different categories, based on the classification in Verrecchia and Weber (2006) and Boone et al. (2016).[29] Table 2, Panel B, reports the counts of IRS material contract downloads and of material contracts by contract type, respectively. We find the IRS downloads larger proportions of manufacturing and sales contracts, investment contracts, and intangible contracts (column 2) than would be expected given the proportions of material contracts that they represent (column 4). For example, manufacturing and sales contracts comprise 5.33 percent of material contracts but they represent 7.43 percent of IRS downloads. As discussed previously, these contracts can have tax implications.

We test for an association between IRS scrutiny and downloads of material contracts by contract type.[30] As shown in Panel C, downloads of manufacturing and sales contracts, investment contracts, and intangible contracts are positively associated with our primary measure of IRS scrutiny, *IRS_AUDIT_RATE*. These positive associations are consistent with the notion that these types of contracts are likely to discuss business transactions that can bear tax implications (e.g., purchases and sales agreements, M&As, R&D, and license agreements). We also find that the IRS downloads large numbers of employment contracts and credit or lease contracts, but the proportions of IRS downloads for these contracts (Panel B, column 2) are lower than the corresponding proportions of material contracts that they represent (column 4). However, the large

[28] Regarding the positive coefficient on *DTA,* Bozanic (2017, p. 93) explains that it is "consistent with IRS attention increasing in the level of future tax deductions embedded in deferred tax assets" but prior literature does not characterize this variable as being associated with tax-related disclosure costs so we follow this prior literature.

[29] Verrecchia and Weber (2006) and Boone et al. (2016) use nine categories: 1) Credit or lease contracts; 2) Employment contracts; 3) Purchases and sales of assets; 4) Manufacturing and sales contracts, including inventory, production, distribution/sales; 5) License and royalty contracts; 6) Stockholder contracts; 7) R&D contracts; 8) M&A and reorganization contracts; and 9) other miscellaneous contracts. Because categories 3), 5), 7), and 8) account for small proportions of total contracts, to increase the power of our tests, we combine categories 5) and 7), labeling them Intangible contracts, and we combine categories 3) and 8), labeling them Investment contracts.

[30] We conduct within-contract type analyses by constraining the sample to observations with at least one contract of the given type in year *y*.

numbers of downloads and the significant relations between the number of downloads and our IRS scrutiny measure (as shown in Panel C) indicate that some of these contracts are of interest to the IRS.[31]

Overall, the results in Table 2 validate our conjecture that the IRS uses information from material contracts. They also suggest that disclosures about general business information (e.g., material contracts) can bear tax-related disclosure costs even when they are not specifically about tax. Because managers could perceive that material contracts contain information that could be useful to the IRS for its enforcement activities, they have incentives to redact material contract disclosures, especially in the face of heightened IRS scrutiny.

### 4.2 IRS scrutiny and redactions in material contracts

#### 4.2.1 *IRS scrutiny and redaction patterns*

We start by providing preliminary evidence on the association between IRS audit rates and redactions. Table 3, Panel A, reports the proportion of firms that redact material contract disclosures in each IRS firm-asset-size group over time. Considering these results in conjunction with the IRS audit rates from Table 1, Panel B, several interesting findings emerge. First, the largest asset-size group (i.e., firms with total assets greater than or equal to $20 billion) has a nearly 100 percent audit rate before the IRS budget cut (i.e., pre-2013). Second, other than for the largest two IRS firm-asset-size groups, there is an almost monotonic relation between IRS audit rates and redactions.

A univariate test (untabulated) shows that the incidence of redaction is significantly lower for firms in the largest asset-size group relative to the remaining groups. Because the largest asset-size group is facing almost certain IRS audits and therefore has little tax-motived incentive to

[31] For example, employment contracts could discuss tax arrangements for compensation paid to executives and credit or lease contracts disclose terms where interest expense or lease payments could offer tax advantages.

redact, we remove this group from our sample, resulting in a final sample of 12,852 firm-year observations for the subsequent analyses (Appendix B, Step 6).[32]

**4.2.2** ***Summary statistics***

Table 3, Panel B, presents descriptive statistics for the Eq. (1) variables. The mean values of *REDACT_D*, *REDACT_FILE*, and *REDACT_CNT* are 0.098, 0.139, and 0.255, respectively. This indicates that 9.8 percent of sample firms redact information from at least one material contract during the year, and redact information from 0.139 filings and 0.255 material contracts, on average. These descriptive statistics are consistent with those in Chen et al. (2022) and Heinle et al. (2023). The mean value of *IRS_AUDIT_RATE* is 22.42 percent, which is slightly lower than that in Guedhami and Pittman (2008) and Hoopes et al. (2012), but is consistent with IRS audit rates decreasing in the post-2000 period due to budget cuts (Nessa et al. 2020). Descriptive statistics for the control variables are comparable to those in prior studies (e.g., Bozanic et al. 2017; Glaeser 2018).

Panel C presents the Pearson correlations among variables. The three redaction measures (*REDACT_D*, *REDACT_FILE*, and *REDACT_CNT*) are positively correlated. The Pearson correlation coefficients are 0.86 for *REDACT_D* and *REDACT_FILE*, 0.49 for *REDACT_D* and *REDACT_CNT*, and 0.68 for *REDACT_FILE* and *REDACT_CNT*. More importantly, all three measures are positively correlated with the probability of an IRS audit (*IRS_AUDIT_RATE*), with correlation coefficients of 0.03. This provides preliminary evidence that firms subject to greater IRS scrutiny make more material contract redactions. We also find a positive correlation between *REDACT_D* and tax uncertainty (*UTB*) and a negative correlation between *REDACT_D* and GAAP ETRs (*GAAPETR*). Because firms with more uncertain tax positions and lower tax rates have higher tax-related disclosure costs, the results suggest that these redactions are at least partly tax

[32] In untabulated tests, we find that the positive association between IRS audit rates and redactions is robust to removing firms in the largest two IRS firm-asset-size groups.

motivated.

### 4.2.3 *Main results*

Table 4, columns (1)-(6) report the results from estimating Eq. (1) using the three measures of material contract redactions. Columns (1), (3), and (5) report the baseline regression results. In column (1), where the dependent variable is *REDACT_D*, the coefficient on *IRS_AUDIT_RATE* is 0.038, significant at the 1 percent level (z-statistic = 3.00). Holding other variables at their means, a 10 percentage point increase in *IRS_AUDIT_RATE* increases the probability of redacting material contract disclosure by 1.86 percent. Because the unconditional probability of redacting material contract disclosure is 9.8 percent, this effect is economically meaningful. In columns (3) and (5), where the dependent variables are *REDACT_FILE* and *REDACT_CNT*, the coefficient estimates on *IRS_AUDIT_RATE* are 0.031 and 0.028, and they are significant at the 1 and 5 percent levels (*z*-statistics = 2.86 and 2.54), respectively. In economic terms, a 10 percentage point increase in *IRS_AUDIT_RATE* results in approximately 36.34 percent more filings ($\exp^{0.31}$-1) and 32.31 percent more contracts ($\exp^{0.28}$-1) with redactions. The significant and positive coefficients on *IRS_AUDIT_RATE* indicate that firms are more likely to redact material contract disclosure and redact more filings and contracts when their likelihood of being audited is perceived to be higher, supporting our tax-related disclosure cost argument.[33]

Regarding the control variables, we find that redactions in material contracts are positively associated with R&D expenditures (*R&D*), product market fluidity (*FLUIDITY*), leverage (*LEV*), and stock returns (*RETURN*), and negatively associated with firm size (*Ln(SIZE)*) and investment in intangible assets (*INTANGIBLE*). These findings are consistent with prior studies showing that

[33] In an untabulated test, we re-estimate Eq. (1) using the subsample of firms with negative pretax income, which we excluded when we constructed our sample, following prior literature. For all three redaction measures, we find an insignificant relation between IRS audit rates and material contract reactions, consistent with the conjecture that firms with negative pretax income have weaker tax-motivated incentives to redact material contracts.

firms are more likely to redact material contract disclosure when they have stronger incentives to protect proprietary information from competitors (Verrecchia and Weber 2006; Boone et al. 2016; Glaeser 2018). As expected, the counts of redacted filings and redacted contracts are positively associated with the number of 8-Ks and periodic filings (*Ln(NUM_FILE)*) during the year and the number of material contracts (*Ln(NUM_CNT)*), respectively.[34, 35]

We next exploit the panel structure of our data and estimate the model with firm fixed effects. As shown in columns (2), (4), and (6) of Table 4, we continue to find positive and significant coefficients on *IRS_AUDIT_RATE*, suggesting that the results are unlikely to be driven by unobservable time-invariant differences across firms or spurious omitted firm-specific variables. However, adding firm fixed effects essentially removes cross-sectional variation, which can reduce the power of our tests, resulting in failure in rejecting the null. We therefore consider the model with industry and size-group fixed effects to be our main specification.

Finally, considering the low proportion of firm-year observations that redact material contract disclosure (only 9.8 percent), we re-estimate Eq. (1) using a subsample limited to firms that have ever redacted during the sample period. As shown in columns (7)-(9), the IRS audit rate is positively associated with the likelihood of redaction and the count of redacted filings and contracts, suggesting that our findings are likely to be driven by the variation in IRS scrutiny rather than firm size or other time-invariant firm characteristics. Overall, the results in Table 4 show that firms facing greater IRS

[34] Because the frequencies of filings (material contracts) with redactions might be higher simply because the firm has more filings (material contracts), Eq. (1) controls for the number of filings (material contracts). Alternatively, for the subsample of firms with at least one 8-K or periodic filing (Exhibit 10.xx) during the year, we use a scaled measure of redactions, defined as *REDACT_FILE* (*REDACT_CNT*) divided by *NUM_FILE* (*NUM_CNT*) in year *y* as the dependent variable in Eq. (1) and estimate the equation using ordinary least squares (OLS) regression. The (untabulated) coefficient estimates on *IRS_AUDIT_RATE* are 0.00035 and 0.00048 (*t*-statistics = 2.90 and 2.29), respectively, for the scaled dependent variables. Therefore, our findings are not driven by variation in the frequency of filings or in the number of material contracts across firms.

[35] By construction, *IRS_AUDIT_RATE* is highly correlated with firm size (*Ln(SIZE)*). When we drop *Ln(SIZE)* from the regression, our inferences hold (untabulated). Moreover, except for *Ln(SIZE)* and *IRS_AUDIT_RATE*, the variance inflation factors of the regressors do not exceed 5, suggesting that multicollinearity is not a significant concern.

scrutiny are more likely to redact material contract disclosure and redact material contracts more frequently.

**4.3 Cross-sectional analyses**

We next examine whether the relation between IRS scrutiny and redactions in material contracts varies with firms' uncertain tax positions, their level of tax avoidance, and the presence of foreign subsidiaries. As discussed earlier, these factors capture tax-related disclosure costs and are significantly associated with IRS downloads, so they can affect firms' redaction incentives.[36] We also conduct a cross-sectional test based on product market competition because it increases firm incentives to redact to protect proprietary information and increases the IRS's processing cost to unravel firms' redaction incentives.

Prior literature indicates that IRS enforcement and tax-related disclosure costs vary with firms' uncertain tax positions, level of tax avoidance, and subsidiary locations. Regarding uncertain tax positions, Law and Mills (2015) and De Simone et al. (2016) find that firms with larger unrecognized tax benefit balances (*UTB*) are more likely to be audited and make larger audit adjustments, indicating more costly IRS enforcement for these firms. Regarding the level of tax avoidance, when a firm aggressively avoids tax, any tax benefits disallowed during a tax audit will result in negative cashflows and high enforcement costs. As a result, firms with lower GAAP ETRs provide more vague and less readable footnotes to avoid IRS scrutiny (Inger et al. 2018; Richter et al. 2024). Regarding subsidiary locations, U.S. multinational corporations (MNCs) with foreign subsidiaries can structure transactions such as royalty payments to shift income across jurisdictions and reduce taxes (Dyreng and Lindsey 2009; Markle and Shackelford 2012). Based on this prior literature and our analysis of IRS downloads, we expect firms with higher UTB balances, lower

[36] An additional cross-sectional test based on deferred tax assets (untabulated) shows that the relation between IRS audit rates and contract redactions is significantly more positive for the subsample with above-median *DTA* values.

GAAP ETRs, and foreign subsidiaries to have greater incentives to redact material contract disclosure to avoid IRS enforcement.

Table 5 reports regression results where the sample is partitioned into subsamples based on the median value of *UTB* (in Panel A), the median value of *GAAPETR* (in Panel B), or the presence of foreign subsidiaries (in Panel C). We find the relation between redactions in material contracts and IRS scrutiny is positive and significant only for the subsample with above-median *UTB*, the subsample with below-median *GAAPETR*, and for MNCs with foreign subsidiaries. As expected, the relation is insignificant for the other subsamples. Asymptotic *z*-tests indicate that, across the three panels, the differences in the coefficients on *IRS_AUDIT_RATE* across these subsamples are statistically significant in seven of nine cases. The only exceptions are in Panels B and C when the indicator *REDACT_D* is the dependent variable.

Finally, we examine whether product market competition plays a role in firms' contract redaction decisions. Redactions are intended to protect proprietary information from being released to competitors (Glaeser 2018; Chen et al. 2022). When firms facing relatively low product market competition redact material contract disclosure, the IRS could view these redactions as "red flags" because these firms' redactions are likely made with the goal of avoiding IRS scrutiny. This should deter firms with low product market competition from making redactions. In contrast, when firms facing relatively high product market competition redact material contract disclosure, the IRS is unlikely to infer that these redactions were made to avoid IRS scrutiny. This provides firms facing high product market competition with more opportunities to redact information to avoid IRS scrutiny. Panel D reports results for subsamples with high (above-median) and with low (below-median) *FLUIDITY*. We find that the relation between redactions and IRS scrutiny is positive and significant only for the subsample of firms with high product market competition. In addition, the relation

between redactions and IRS scrutiny is statistically insignificant for the subsample of firms with low product market competition, suggesting that the signaling role of nondisclosure and potential unraveling by the IRS mitigate firms' redaction incentives.

Although it is difficult to disentangle tax-related disclosure costs from competition-related proprietary costs, such that the cross-sectional results in Table 5 should be interpreted with caution,[37] the results in Table 5 suggest that firms' redactions of material contract disclosure vary with tax-related disclosure costs.

### 4.4 Robustness tests

#### 4.4.1 *Alternative IRS scrutiny measures*

We next examine whether our main inference is robust to the use of alternative IRS scrutiny measures. First, we measure IRS scrutiny using geographic proximity (*PROXIMITY*), measured as the natural logarithm of the geodesic distance (in miles), multiplied by -1, of the firm's headquarters and the closest IRS regional office. Kubick et al. (2017) finds that the closer a firm's headquarters to an IRS office, the higher the likelihood of an IRS audit. The coefficients on *PROXIMITY* in Table 6, columns (1), (5), and (9) are positive and significant, indicating that firms closer to IRS regional offices are more likely to redact material contract disclosure.

Second, we use the IRS exposure measure developed in Armstrong et al. (2024) as an alternative IRS scrutiny measure. *IRS_EXPOSURE* is measured by counting the number of sentences with references to the IRS and scaling by the number of sentences in the 10-K. Armstrong et al. (2024) validates this measure by showing that it is positively associated with IRS downloads of its annual reports, indicating higher IRS scrutiny. Columns (2), (6), and (10) report

[37] For example, *UTB*, *GAAPETR*, and foreign subsidiaries could also capture some proprietary costs of disclosure, and reporting intellectual property license income or sales income could result in a change in product description, influencing *FLUIDITY*.

the regression results. For all three redaction measures, the coefficients on *IRS_EXPOSURE* are positive and significant, indicating that firms with greater IRS exposure redact material contract disclosures more frequently.

Next, from 1992 through 2000, the IRS reported audit data aggregated by IRS district, which allows us to exploit audit rates based on district-year and district-size-year groups. Our sample period starts in 1994 because this was the first year that 8-Ks and periodic filings were available on EDGAR for most firms. First, we form *DISTRICT_AUDIT_RATE* which equals the number of corporate tax returns for a given IRS district audited by the IRS in fiscal year *y* divided by the number of corporate tax returns received in the same IRS district in the previous year, multiplied by 100. Second, we form *DISTRICT/SIZE_AUDIT_RATE* which equals the number of corporate tax returns audited by the IRS in a given IRS district for a given IRS firm-asset-size group in fiscal year *y* divided by the number of corporate tax returns received for the same IRS district-asset-size group in the previous year, multiplied by 100. *DISTRICT_AUDIT_RATE* and *DISTRICT/SIZE_AUDIT_RATE* will be different for firms in the same asset-size group but in different districts. Because these two measures do not directly depend on firm size, observing positive associations with redactions would help to dispel the concern that our primary finding is driven by firm size. Because CTOs were not disclosed on EDGAR during this earlier sample period, we follow Park et al. (2019) and use a keyword search to identify redacted material contracts in 10-K, 10-Q, and 8-K filings. Columns (3)-(4), (7)-(8), and (11)-(12) report the regression results using the two district-based measures of IRS scrutiny. The coefficients on *DISTRICT_AUDIT_RATE* and *DISTRICT/SIZE_AUDIT_RATE* are positive and significant at 5 percent or lower, suggesting that IRS scrutiny, rather than firm size, incentivizes the observed redactions.

#### 4.4.2 *Other robustness tests*

In this subsection, we conduct additional robustness tests to ensure that our results based on *IRS_AUDIT_RATE* are not driven by a firm size or time effect. Table 7 reports the results. Because *REDACT_D* and *REDACT_FILE* are highly correlated and the results are qualitatively similar, for brevity, we only tabulate the results using *REDACT_D* (in Panel A) and *REDACT_CNT* (in Panel B). First, following Bauer et al. (2021), we rank all sample observations into 10 groups based on total assets. Then we re-estimate Eq. (1) by including the indicator variables based on the asset-size decile groups instead of those based on IRS firm-asset-size groups. As shown in column (1), the results are qualitatively similar to those in Table 4. In columns (2)-(3), we replace the firm size measure (*Ln(SIZE)*) with the natural logarithms of total assets (*Ln(AT)*) and total sales (*Ln(SALES)*), respectively, and the coefficients on *IRS_AUDIT_RATE* remain positive and significant at 5 percent or lower.

Next, to mitigate the concern that the positive association between the probability of an IRS audit and redactions stems from a time trend, we replace the year fixed effects with a time trend variable (*TREND*) and its square. As shown in columns (4)-(5), after controlling for the time trend, the positive coefficient on *IRS_AUDIT_RATE* persists.

Because IRS audit rates are measured by asset-size group, the assumed probability of audit is a step function of firm size. However, the actual probability of audit could be a smooth function of size and the other determinants. If so, our main measure likely underestimates (overestimates) the probability of audit for firms close to the upper (lower) bound of a firm-asset-size group. To mitigate this concern, we follow Bauer et al. (2021) and exclude firms that are close to the thresholds (i.e., those with asset values within 5 percent of the asset thresholds). In column (6), we

find that the coefficient on *IRS_AUDIT_RATE* remains positive and significant.[38]

Next, we conduct a placebo test by randomizing the IRS audit rates across years within the same IRS firm-asset-size groups. We replace the actual IRS audit rate (*IRS_AUDIT_RATE*) with this randomized audit rate (*Pseudo_AUDIT_RATE*) and re-estimate Eq. (1). As shown in column (7), the coefficient on *Pseudo_AUDIT_RATE* is insignificantly different from zero. This result provides additional assurance that the positive association between the IRS audit rate and material contract redactions documented in Table 4 is driven by the exogenous variation in IRS scrutiny rather than firm size.

Finally, we replace the numerator of *IRS_AUDIT_RATE* with the number of audited tax returns that were required to make changes to their tax calculations in the given firm-asset-size group and we re-estimate Eq. (1). Again, the untabulated results reveal that our inferences from Table 4 hold.

**4.5 Types of material contracts with redactions**

We next examine the types of material contracts from which firms redact information. To do this, we download all material contracts for firms in our final sample and we classify them into the seven categories discussed above. The distribution of contract types is consistent with that in Sehn (2024). Table 8, Panel A, presents the counts for material contracts and for contracts with redactions, by contract type, as well as the proportion of redacted contracts by type. As shown in the last column, the proportions of redacted contracts are high for contracts related to manufacturing and sales, investment, and intangibles. Manufacturing and sales contracts discuss ongoing transactions and contain information such as pricing terms, sales quantities, and milestone payments that could be useful

[38] In another robustness test, we exclude all firms that change IRS firm-asset-size groups during our sample period, which reduces the sample size by approximately 54 percent. We continue to find a positive and significant coefficient on *IRS_AUDIT_RATE*.

for the IRS to assess firms' tax compliance. Investment contracts can relate to M&As and reorganizations, which may have tax consequences (Richter et al. 2024). Intangible contracts refer to R&D contracts and licensing and royalty contracts. These can discuss business transactions related to R&D tax credits and licensing income, which can be used to reduce tax burdens. Thus, these types of contracts contain information that helps IRS enforcement and bear tax-related disclosure costs, which in turn incentivizes managers to withhold information. In addition, we observe a sizeable number of redacted contracts related to employment and credit or lease, although the proportions of contracts with redactions are relatively low for these contract types. The redactions in these contracts are consistent with our earlier conjecture that some of these contracts can bear tax implications.

We replace the dependent variable in Eq. (1) with the count of each of the seven types of material contracts with redactions. Because a firm may redact information from multiple contracts (or exhibits) in one SEC filing, we conduct this analysis at the contract level rather than at the filing level, and we constrain the sample to observations with at least one contract of that specific type, which explains the different sample sizes across the columns. Panel B reports the regression results. We find that the coefficients on *IRS_AUDIT_RATE* are positive and significant for redactions in contracts related to manufacturing and sales, investment, and intangibles. We also find positive and significant coefficients on *IRS_AUDIT_RATE* for redactions in employment contracts and credit or lease contracts. The results suggest that firms facing a higher ex-ante likelihood of IRS audits redact information from material contracts that is perceived to be useful to the IRS, consistent with tax-related disclosure costs reducing disclosure. In contrast, we find no associations between IRS audit rates and redactions in contracts related to stockholder agreements and others.

**4.6 Findings from exogenous shocks: Schedule UTP and the 2013 IRS budget cut**

To strengthen our inferences that material contract redactions are at least partly motivated by management's desire to reduce IRS scrutiny, we exploit two exogenous shocks. The first is the staggered adoption of the Uncertain Tax Position Statement (Schedule UTP), which increases the amount of information privately available to the IRS. In 2010, the IRS began the gradual rollout of Schedule UTP, which requires firms to itemize the uncertain tax positions that make up their financial statement reserves in a private disclosure to the IRS. Bozanic et al. (2017) finds that following Schedule UTP adoption, the IRS is less likely to acquire information from public disclosure, presumably because it has access to more information from this new source. Because managers could rationally assume that redactions in material contracts play a less important role in deterring IRS scrutiny, Schedule UTP should reduce firms' incentives to redact information from material contracts.

We employ a difference-in-differences (DiD) design to test the effect of Schedule UTP on redactions. Schedule UTP was gradually implemented between 2010 and 2014 and did not apply to all firms, allowing us to identify treatment and control groups. Under Schedule UTP, only firms that meet an asset threshold and have recorded reserves on their financial statements, with positive year-end UTB balances, are mandated to disclose their disaggregated uncertain tax positions to the IRS. Following Bozanic et al. (2017), we identify treated firms as those that have total assets greater than $100 million ($50 million/$10 million) and positive year-end UTB balances on or after 2010 (2012/2014). *TREAT_UTP* equals 1 for firms in the treated group, and 0 otherwise. For treated firms, *POST_UTP* equals 1 for firm-years on or after the firm starts to report uncertain tax positions in Schedule UTP, and 0 otherwise.[39] For control firms that are never subject to Schedule

[39] Firms with assets greater than $100 million that have positive UTB balances starting later than in 2010 belong to the treated group with the treatment effect starting from the first year with positive UTB balances. Any firms not recording positive UTB balances throughout the sample period belong to the control group. Thus, the group of firms

UTP reporting, we assign a random pseudo year between 2010 and 2018, and *POST_UTP* equals 1 for firm-years on or after the pseudo year. We replace *IRS_AUDIT_RATE* with *TREAT_UTP*, *POST_UTP*, and their interaction, and re-estimate Eq. (1). The interaction term *TREAT×POST* captures the differential effect of Schedule UTP on redactions for treated firms relative to control firms.

Table 9, Panel A, reports the results. For all three redaction measures, the coefficients on the interaction term *TREAT_UTP×POST_UTP* (-0.635, -0.517, and -0.499) are significant at 5 percent (*z*-statistics = -2.47, -2.45, and -2.50, respectively). These negative and significant coefficients suggest that relative to control firms never subject to Schedule UTP reporting requirements, treated firms make fewer redactions. That is, firms make fewer redactions when the IRS can obtain information from an alternative source. These results suggest that an exogenous increase in the information privately accessible to the IRS reduces firms' tendency to redact material contract disclosure, providing supporting evidence of a tax-related disclosure cost motive for redactions.

Second, we exploit the 2013 IRS budget cuts as an exogenous shock to IRS scrutiny. The IRS budget cut reduces firms' exposure to the IRS, especially for those significantly exposed to the IRS prior to the reduction in IRS funding (Armstrong et al. 2024). Thus, we identify the treated firms as those with IRS exposure in the top tercile in 2012. We expect that facing reduced IRS exposure, treated firms have weaker incentives to redact material contract disclosure relative to control firms. Panel B reports the regression results. Consistent with our expectation, we find that treated firms experience a greater reduction in material contract redactions following the budget cut, providing evidence supporting a causal relation between IRS scrutiny and material contract

with assets greater than $100 million includes both pre-treatment and control-group observations, which allows us to conduct the DiD test.

redactions.

### 4.7 Redactions and ex-post IRS enforcement

Lastly, we test whether material contract redactions reduce ex-post IRS enforcement. To capture IRS enforcement, we focus on references to an IRS audit in the firm's 10-K and on future settlements with tax authorities (Bozanic et al. 2017; Fox and Wilson 2023). *AUDIT_REF* is an indicator variable equal to 1 if the firm mentions an IRS audit in its 10-K filing in year *y*+1, and 0 otherwise.[40] *SETTLEMENT_D* is an indicator variable equal to 1 if the firm discloses a positive tax settlement related to unrecognized tax benefits in year *y*+1, and 0 otherwise. To test for an association between redactions and future IRS enforcement, we estimate the following model:

$$ENFORCEMENT_{i,y+1} = \alpha + \beta REDACT_{i,y} + c' Controls_{i,y} + Industry\ fixed\ effects + Fiscal\ year\ fixed\ effects + \varepsilon_{i,y+1} \quad (2)$$

where the dependent variable is one of the two IRS enforcement measures (*AUDIT_REF* or *SETTLEMENT_D*) and *REDACT* is one of the three redaction measures (*REDACT_D*, *REDACT_FILE*, or *REDACT_CNT*). In addition to the set of control variables in Eq. (1), we include *AUDIT_REF* (*SETTLEMENT_D*) in year *y* to control for the persistence in IRS enforcement.

Table 10 presents the results. In columns (1)-(3), where the dependent variable is $AUDIT\_REF_{y+1}$, the coefficients on the redaction measures are negative and significant, suggesting that material contract redactions in year *y* are negatively associated with an IRS audit in year *y*+1. When the dependent variable is $SETTLEMENT\_D_{y+1}$, in columns (4)-(6), the coefficients on the redaction measures are also negative and significant, indicating that redacting firms are less likely

[40] We follow Bozanic et al. (2017) and Yost (2023) and use a keyword search to identify references to IRS audits in 10-Ks.

to settle with the IRS than non-redacting firms.[41]

## 5 Conclusion

Because the IRS uses firms' public disclosures in its tax enforcement activities, we test whether firms facing greater ex-ante IRS scrutiny redact more material contract disclosure from their filings with the SEC. We find a positive association between ex-ante IRS scrutiny and material contract redactions, consistent with tax-related disclosure costs inhibiting disclosure. The positive association between redactions and ex-ante IRS scrutiny is more pronounced for firms facing greater tax uncertainty, with lower GAAP ETRs, and with foreign subsidiaries, illustrating the importance of tax-related disclosure costs. We also find that redactions reduce IRS enforcement ex post. Our results add to the extant literature by expanding our understanding of how tax-related disclosure costs shape firms' disclosure of general business information. We also contribute to the redaction literature by providing new evidence suggesting that firms use redactions to reduce IRS scrutiny. Because firm disclosures affect multiple users (e.g., investors, analysts, regulators, and competitors), how managers trade off costs and benefits when making disclosure decisions is important. We add to this literature and call on researchers to examine other costs and benefits, as well as other disclosure types.

[41] The inferences in Table 10 hold when we include IRS audit rates and size-group fixed effects in Eq. (2).

**References**


Anantharaman, D., and Y. Zhang. 2011. Cover me: Managers' responses to changes in analyst coverage in the post-Regulation FD period. *The Accounting Review* 86(6): 1851-1885.

Armstrong, D. M., S. Glaeser, and J. L. Hoopes. 2024. Measuring firm exposure to government agencies. *Journal of Accounting and Economics*, forthcoming.

Ayers, B. C., J. K. Seidman, and E. M. Towery. 2019. Tax reporting behavior under audit certainty. *Contemporary Accounting Research* 36(1): 326-358.

Balakrishnan, K., J. L. Blouin, and W. R. Guay. 2019. Tax aggressiveness and corporate transparency. *The Accounting Review* 94(1): 45-69.

Bao, D., Y. Kim, and L. Su. 2022. Do firms redact from material contracts to withhold bad news? *The Accounting Review* 97(5): 29-57.

Bao, D., L. Su, X. Zhao, and G. Zhou. 2024. Takeover threats and mandatory disclosure avoidance: Evidence from contract redactions. Working paper, Lingnan University, Hong Kong Polytechnic University, and Hong Kong Baptist University.

Barth M. E., W. R. Landsman, X. (S.) Tian, and M. Yu. 2023. Does voluntary disclosure substitute for mandatory disclosure? Evidence from contract redactions. Working paper, Stanford University, University of North Carolina, Georgetown University, and Louisiana State University.

Bauer, A. M., X. Fang, and J. A. Pittman. 2021. The importance of IRS enforcement to stock price crash risk: The role of CEO power and incentives. *The Accounting Review* 96(4): 81-109.

Bens, D. A., P. G. Berger, and S. J. Monahan. 2011. Discretionary disclosure in financial reporting: An examination comparing internal firm data to externally reported segment data. *The Accounting Review* 86(2): 417-449.

Bhojraj, S., W. G. Blacconiere, and J. D. D'Souza. 2004. Voluntary disclosure in a multi-audience setting: An empirical investigation. *The Accounting Review* 79(4): 921-947.

Blouin, J. L., C. A. Gleason, L. F. Mills, and S. A. Sikes. 2010. Pre-empting disclosure? Firms' decisions prior to FIN No. 48. *The Accounting Review* 85(3): 791-815.

Boone, A. L., I. V. Floros, and S. A. Johnson. 2016. Redacting proprietary information at the initial public offering. *Journal of Financial Economics* 120(1): 102-123.

Boone, A. L., and J. T. White. 2015. The effect of institutional ownership on firm transparency and information production. *Journal of Financial Economics* 117(3): 508-533.

Bourveau, T., D. Stice, and R. Wang. 2022. Strategic disclosure and debt covenant violation. *Journal of Management Accounting Research* 34(3): 29-57.

Bozanic, Z., J. Hoopes, J. R. Thornock, and B. M. Williams. 2017. IRS attention. *Journal of Accounting Research* 55(1): 79-114.

Bushee, B., and C. Noe. 2000. Corporate disclosure practices, institutional investors, and stock return volatility. *Journal of Accounting Research* 38(Supplement): 171-202.

Cao, S. S., G. Ma, J. W. Tucker, and C. Wan. 2018. Technological peer pressure and product disclosure. *The Accounting Review* 93(6): 95-126.

Chen, G., X. Tian, and M. Yu. 2022. Redact to protect? Customers' incentive to protect information and suppliers' disclosure strategies. *Journal of Accounting and Economics* 74(1): 101490.

Chen, J. Z, H. A. Hong, J. B. Kim, and J. W. Ryou. 2021. Information processing costs and corporate tax avoidance: Evidence from the SEC's XBRL mandate. *Journal of Accounting and Public Policy* 42(2): 1-21.

Chychyla, R., D. Falsetta, and S. Ramnath. 2022. Strategic choice of presentation format: The case of ETR reconciliation. *The Accounting Review* 97(1): 177-211.

De Simone, L., L. F. Mills, and B. Stomberg. 2016. Examining IRS audit outcomes of income mobile firms. Working paper, Stanford University, The University of Texas at Austin, and University of Georgia.

Dyreng, S. D., and B. Lindsey. 2009. Using financial accounting data to examine the effect of foreign operations located in tax havens and other countries on US multinational firms' tax rates. *Journal of Accounting Research* 47(5): 1238-1316.

Dyreng, S. D., J. L. Hoopes, and J. H. Wilde. 2016. Public pressure and corporate tax behavior. *Journal of Accounting Research* 54(1): 147-186.

Dyreng, S. D., J. L. Hoopes, P. Langetieg, and J. H. Wilde. 2020. Strategic subsidiary disclosure. *Journal of Accounting Research* 58(3): 643-692.

Ehinger, A. C., J. A. Lee, B. Stomberg, and E. Towery. 2024. IRS enforcement and voluntary tax disclosure. *Journal of the American Taxation Association*, forthcoming.

Ellis, J. A., C. E. Fee, and S. E. Thomas. 2012. Proprietary costs and the disclosure of information about customers. *Journal of Accounting Research* 50(3): 685-727.

Fox, Z., D., and R. Wilson. 2023. Double trouble? IRS's attention to financial accounting restatements. *Review of Accounting Studies* 28: 2002-2038.

Glaeser, S. 2018. The effects of proprietary information on corporate disclosure and transparency: Evidence from trade secrets. *Journal of Accounting and Economics* 66(1): 163-193.

Grossman, S. J. 1981. The informational role of warranties and private disclosure about product quality. *Journal of Law and Economics* 24(3): 461-483.

Guedhami, O., and J. A. Pittman. 2008. The importance of IRS monitoring to debt pricing in private firms. *Journal of Financial Economics* 90(1): 38-58.

Hanlon, M., J. Hoopes, and N. Shroff. 2014. The effect of tax authority monitoring and enforcement on financial reporting quality. *Journal of the American Taxation Association* 36(2): 137-170.

Hanlon, M., L. Mills, and J. Slemrod. 2007. An empirical examination of corporate tax noncompliance. In *Taxing Corporate Income in the 21st Century*. A. Auerbach, J. Hines, and J. Slemrod (eds.). New York, NY: Cambridge University Press.

Heinle, M., D. Samuels, and D. Taylor. 2023. Disclosure substitution. *Management Science* 69(8): 4774-4789.

Hoberg, G., G. Phillips, and N. Prabhala. 2014. Product market threats, pay-outs, and financial flexibility. *The Journal of Finance* 69(1): 293-324.

Hoopes, J. L., D. Mescall, and J. A. Pittman. 2012. Do IRS audits deter corporate tax avoidance? *The Accounting Review* 87(5): 1603-1639.

Hope, O. K., M. Ma, and W. B. Thomas. 2013. Tax avoidance and geographic earnings disclosure. *Journal of Accounting Economics* 56(2-3): 170-189.

Huang, Y., R. Jennings, and Y. Yu. 2017. Product market competition and managerial disclosure of earnings forecasts: Evidence from import tariff rate reductions. *The Accounting Review* 92(3): 185-207.

Inger, K. K., M. D. Meckfessel, M. Zhou, and W. Fan. 2018. An examination of the impact of tax avoidance on the readability of tax footnotes. *Journal of the American Taxation Association* 40(1): 1-29.

Internal Revenue Service (IRS). 2008. *Internal Revenue Service Data Book, 2008.* Washington, D.C.: Internal Revenue Service.

Kubick, T. R., G. B. Lockhart, L. F. Mills, and J. R. Robinson. 2017. IRS and corporate taxpayer effects of geographic proximity. *Journal of Accounting and Economics* 63(2): 428-453.

Kubick, T. R., D. P. Lynch, M. A. Mayberry, and T. C. Omer. 2016. the effects of regulatory scrutiny on tax avoidance: An examination of SEC comment letters. *The Accounting Review* 91(6): 1751-1780.

Kim, J.-B., Y. Li, and L. Zhang. 2011. Corporate tax avoidance and stock price crash risk: Firm-level analysis. *Journal of Financial Economics* 100(3): 639-662.

Lang, M. H., and R. J. Lundholm. 1996. Corporate disclosure policy and analyst behavior. *The Accounting Review* 71(4): 467-492.

Law, K., and L. F. Mills. 2015. Taxes and financial constraints: Evidence from linguistic cues. *Journal of Accounting Research* 53(4): 777-819.

Lewellen, C. M. 2023. Tax haven incorporation and financial reporting transparency. *Review of Accounting Studies* 28: 1811-1855.

Luo, L., M. S. Ma, T. C. Omer, and H. Xie. 2024. Tax avoidance and firm value: Does qualitative disclosure in the tax footnote matter? *Review of Accounting Studies* 19: 2927-2970.

Markle, K. S., and D. A. Shackelford. 2012. Cross-country comparisons of corporate income taxes. *National Tax Journal* 65(3): 493-527.

McGuire, S. T. 2009. Voluntary explanations of effective tax rate decreases. Working paper, Texas A&M University.

Milgrom, P. R. 1981. Good news and bad news: Representation theorems and applications. *The Bell Journal of Economics* 12(2): 380-391.

Mills, L. F. 1998. Book-tax differences and Internal Revenue Service adjustments. *Journal of Accounting Research* 36(2): 343-356.

Mills, L. F., and R. C. Sansing. 2000. Strategic tax and financial reporting decisions: Theory and evidence. *Contemporary Accounting Research* 17(1): 85-106.

Nessa, M., C. Schwab, B. Stomberg, and E. Towery. 2020. How do IRS resources affect the corporate audit process? *The Accounting Review* 95(2): 311-338.

Park, J., J. Sani, N. Shroff, and H. White. 2019. Disclosure incentives when competing firms have common ownership. *Journal of Accounting and Economics* 67(2-3): 387-415.

Richter, S., J. K. Seidman, R. Sinha, and B. Stomberg. 2024. How tax executives craft income tax disclosures in response to tax-based proprietary costs. Working paper, University of Illinois at Urbana-Champaign, University of Virginia, and Indiana University.

Robinson, L. A., and A. P. Schmidt. 2013. Firm and investor responses to uncertain tax benefit disclosure requirements. *The Journal of the American Taxation Association* 35(2): 85-120.

Saavedra, D. 2023. Do firms follow the SEC's confidential treatment protocols? Evidence from credit agreements. *Review of Accounting Studies* 28: 1388-1412.

Sehn, V. H. 2024. The analysis of material contracts: Use of SEC contractual data in accounting research. Working paper, Ludwig-Maximilian University of Munich.

Seidman, K. J., R. K. Sinha, and B. Stomberg. 2024. Policing corporate taxes: Insights from tax executives. Working paper, University of Virginia and Indiana University.

Shevlin, T., J. Thornock, and B. Williams. 2017. An examination of firms' responses to tax forgiveness. *Review of Accounting Studies* 22: 577-607.

Thompson, A. M. 2022. Political connections and the SEC confidential treatment process. *Journal of Accounting and Economics* 74(1): 101511.

Thompson, A. M., O. Urcan, and H. Yoon. 2023. Do companies redact material information from confidential SEC filings? Evidence from the FAST Act. *The Accounting Review* 98(4): 405-433.

Towery, E. M. 2017. Unintended consequences of linking tax return disclosures to financial reporting for income taxes: Evidence from schedule UTP. *The Accounting Review* 92(5): 201-225.

Verrecchia, R. E. 1983. Discretionary disclosure. *Journal of Accounting and Economics* 5(1): 179-194.

Verrecchia, R. E., and J. Weber. 2006. Redacted disclosure. *Journal of Accounting Research* 44(4): 791-814.

Waymire, G. 1984. Additional evidence on the information content of management earnings forecasts. *Journal of Accounting Research* 22(2): 703-718.

Wurgler, J. 2000. Financial markets and the allocation of capital. *Journal of Financial Economics* 58(1): 187-214.

Yost, B. P. 2023. Does increased visibility to the IRS cause public firms to go private? Evidence from FIN 48. *Journal of Accounting and Economics* 75(2-3): 101553.

## **Appendix A** Example of a material contract with redactions

https://www.sec.gov/Archives/edgar/data/318306/000031830614000027/ex_10-30.htm

**LICENSE AGREEMENT**

This License Agreement (the "Agreement"), is made and entered into on September 19, 2014 (the "Effective Date") by and between (i) Access Pharmaceuticals, Inc., a Delaware corporation, with its principal place of business located at 1325 Avenue of the Americas, 27th Floor, New York, NY USA (hereinafter referred to as "ACCESS") and (ii) Plasma Technologies, LLC, a South Carolina limited liability corporation, with an address at 36 Prioleau Street, Unit N, Charleston, SC 29401 ("hereinafter referred to as "PLASMATECH"). ACCESS and PLASMATECH are referred to in this Agreement individually as a "Party" and collectively as the "Parties."

Whereas, PLASMATECH has developed and owns or otherwise controls certain intellectual property rights related to the Licensed Technology (as defined below);

Whereas, ACCESS desires to obtain the rights and licenses set forth herein pertaining to the Licensed Technology;

**LICENSE FEES AND ROYALTIES**

3.1. License Fees.
(a) Effective Date Payment. In consideration of the rights and licenses granted by PLASMATECH herein, ACCESS shall deliver to PLASMATECH a combination of cash and common shares in ACCESS in the amount of five million dollars ($5,000,000.00) [***], net of transaction expenses and underwriting fees) and will be paid according the following schedule:

| Net Proceeds (gross proceeds net of underwriting fees) from Offering | Percent in Common Shares |
|---|---|
| Less than $[***] million | [***]% |
| Between $[***] and $[***] million | [***]% |
| Between $[***] and $[***] million | [***]% |
| Greater than $[***] million | [***]% |

(b) Commercialization Regulatory Approval Payment. Upon Commercialization Regulatory Approval by the FDA of the first Licensed Product, ACCESS shall issue to PLASMATECH common shares in ACCESS in the amount of [***] percent [***] as of the Effective Date [***]; provided, however, that if a Change of Control of ACCESS occurs prior to the receipt of Commercialization Regulatory Approval by the FDA of the first Licensed Product, PLASMATECH shall be entitled to receive, immediately prior to the consummation of such Change of Control, [***].

3.2. Royalties.
(a) As further consideration for the rights and licenses granted by PLASMATECH herein, ACCESS shall pay to PLASMATECH royalties on aggregate Net Sales in the Territory for each calendar year as set forth below:

| **Calendar Year Net Sales in the Territory** | **Royalty Rate** |
|---|---|
| Portion of aggregate annual Net Sales less than $[***] million in any calendar year | [***]% |
| Portion of aggregate annual Net Sales less than $[***] million in any calendar year | [***]% |
| Portion of aggregate annual Net Sales greater than or equal to $[***] million and less than $[***] million in any calendar year | [***]% |
| Portion of aggregate annual Net Sales greater than or equal to $[***] million in any calendar year | [***]2% |

For illustrative purposes, if in a particular calendar year, Net Sales equal $250 million, ACCESS will pay tiered royalties to PLASMATECH, in the aggregate amount of $[***] million, as follows: (i) [***].

**Appendix B** Confidential treatment requests included in the sample

| Step | Description | #filings | #contracts |
|---|---|---|---|
| 1 | Filings and exhibits with confidential treatment requests filed from January 2009 through December 2018, excluding confidential treatment requests with a missing form type or exhibit link | 10,106 | 22,779 |
| 2 | Delete extensions of previously granted confidential treatment requests | 10,033 | 19,966 |
| 3 | Delete confidential treatment requests for material contracts in filings other than 10-Ks, 10-Qs, and 8-Ks | 8,736 | 15,331 |
| 4 | Merge confidential treatment requests with Compustat data for firm-year observations from 2009 through 2018 | 6,144 | 10,777 |
| 5a. | Exclude firms incorporated or headquartered in non-U.S. countries | 5,895 | 10,319 |
| 5b. | Exclude firms in financial or regulated industries | 5,351 | 9,288 |
| 5c. | Exclude firm-year observations with negative pretax income | 2,468 | 4,677 |
| 5d. | Exclude firm-year observations with missing control variables | 1,954 | 3,703 |
| | Full sample = 13,817 firm-year observations with 1,954 filings and 3,703 contracts (exhibits) with confidential treatment requests | | |
| 6 | After removing firms in the largest IRS firm-asset-size group, the final sample = 12,852 firm-year observations with 1,785 filings and 3,283 contracts (exhibits) with confidential treatment requests | | |

**Appendix C** Variable definitions

| Variable | Definition |
|---|---|
| *AUDIT_REF* | An indicator variable equal to 1 if the firm refers to a tax audit in its 10-K filing, and 0 otherwise. |
| *BTD* | Total book-tax difference, equal to the difference between pretax income and estimated taxable income, divided by total assets. Estimated taxable income is the sum of the current federal tax expense and current foreign tax expense divided by the statutory tax rate less the change in the net operating loss carryforward. If the current federal tax expense is not reported, we calculate the total current tax expense as total income taxes less deferred taxes, state income taxes (txs), and other income taxes (txo) following Kim et al. (2011). |
| *CAPX* | Capital expenditure divided by lagged total assets. |
| *CASH* | Cash holdings divided by lagged total assets. |
| *CASHETR* | Taxes paid divided by pretax income less special items, truncated to be between 0 and 1. |
| *CIC* | An indicator variable equal to 1 if the firm's probability of being in the CIC program is greater than 0.5, and 0 otherwise, where the probability of being in the CIC program is computed using the logit model from Table 3, Panel A, Column (1) of Ayers et al. (2019). |
| *DISTRICT/SIZE_AUDIT _RATE* | The number of corporate tax returns audited by the IRS in a given IRS district for a given IRS firm-asset-size group in fiscal year *y* divided by the number of the corporate tax returns received for the same IRS district-asset-size group in year *y*-1, multiplied by 100. |
| *DISTRICT_AUDIT _RATE* | The number of corporate tax returns for a given IRS district audited by the IRS in fiscal year *y* divided by the number of corporate tax returns received for the same IRS district in year *y*-1, multiplied by 100. |
| *DTA* | Net deferred tax assets divided by total assets. |
| *DTL* | Net deferred tax liabilities divided by total assets. |
| *FLUIDITY* | The product market fluidity measure from Hoberg et al. (2014). |
| *FOREIGN* | An indicator variable equal to 1 for MNCs with foreign subsidiaries, and 0 otherwise. |

| | |
|---|---|
| *GAAPETR* | Total tax expenses divided by pretax book income, truncated to be between 0 and 1. |
| *GROWTH* | The difference between current and prior-year sales, scaled by prior-year sales. |
| *INST* | Institutional ownership, measured as shares owned by institutions divided by total shares outstanding in the most recent calendar quarter preceding the end of the fiscal year. |
| *INTANGIBLE* | Intangible assets divided by lagged total assets, and setting missing values to 0. |
| *IRS_AUDIT_RATE* | The number of corporate tax returns for a given IRS firm-asset-size group audited by the IRS in the fiscal year divided by the number of corporate tax returns received from firms in the same IRS firm-asset-size group in the previous year, multiplied by 100. |
| *IRS_DOWNLOAD_CNT* | The number of the firm's material contracts (Exhibit 10s) downloaded by the IRS. |
| *IRS_EXPOSURE* | The number of sentences in the 10-K indicating firm exposure to the IRS divided by the number of sentences in the 10-K, following Armstrong et al. (2024). |
| *LEV* | Long-term debt divided by total assets. |
| *Ln(ANALYST)* | The natural logarithm of one plus the number of analysts following a firm, from the I/B/E/S summary file. |
| *Ln(AT)* | The natural logarithm of total assets. |
| *Ln(NUM_CNT)* | The natural logarithm of one plus the number of material contracts (Exhibit 10s) in 10-Ks, 10-Qs, and 8-Ks. |
| *Ln(NUM_FILE)* | The natural logarithm of one plus the number of 10-Ks, 10-Qs, and 8-Ks filed by the firm. |
| *Ln(SALES)* | The natural logarithm of sales revenue. |
| *Ln(SIZE)* | The natural logarithm of market value of equity at the end of the fiscal year. |
| *MTB* | Market value of equity-to-book value of equity at the end of the fiscal year. |
| *NOL_C* | Change in the tax loss carryforward scaled by lagged total assets. |
| *POST_IRS_CUT* | An indicator variable equal to 1 for years after 2012, and 0 otherwise. |

| | |
|---|---|
| *POST_UTP* | An indicator variable equal to 1 for firm-years on or after the treated firm starts to report uncertain tax positions under Schedule UTP, and for control firms that are never subject to UTP reporting, equal to 1 beginning in a random year between 2010 and 2018, and 0 otherwise. |
| *PPE* | Net property, plant, and equipment divided by lagged total assets. |
| *PROXIMITY* | The natural logarithm of geodesic distance (in miles) between the firm's headquarters and the nearest IRS regional office, multiplied by -1. |
| *R&D* | R&D expenditure divided by lagged total assets, setting missing values to 0. |
| *REDACT_D* | An indicator variable equal to 1 if the firm redacts at least one material contract in the year, and 0 otherwise. |
| *REDACT_CNT* | The number of material contracts (Exhibit 10s) with redactions. |
| *REDACT_FILE* | The number of 10-Ks, 10-Qs, and 8-Ks with redactions. |
| *RETURN* | Cumulative market-adjusted return for the year, where market-adjusted return is the buy-and-hold return minus the CRSP value-weighted market index return. |
| *RETVOL* | Standard deviation of market-adjusted returns for the year. |
| *ROA* | Pretax book income scaled by total assets. |
| *SETTLEMENT_D* | An indicator variable equal to 1 if the firm reports a positive tax settlement related to unrecognized tax benefits under FIN 48, and 0 otherwise. |
| *TREAT_IRS _EXPOSURE* | An indicator variable equal to 1 if the firm's IRS exposure in 2012 is in the top tercile, and 0 otherwise. |
| *TREAT_UTP* | An indicator variable equal to 1 for the treated firms, and 0 otherwise, where treated firms are defined as those eventually subject to the Schedule UTP reporting requirement (i.e., those that meet the asset threshold and have recorded reserves on their financial statements). |
| *UTB* | Year-end unrecognized tax benefits divided by total assets. |

**Table 1** Sample distribution and IRS audit rates by IRS firm-asset-size group and year

Panel A: Number of observations by IRS firm-asset-size group and year

| IRS firm-asset-size group | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $5-$10 million | 3 | 5 | 3 | 1 | 2 | 0 | 1 | 0 | 2 | 1 | 18 |
| $10-$50 million | 86 | 95 | 102 | 74 | 74 | 58 | 61 | 43 | 38 | 39 | 670 |
| $50-$100 million | 81 | 99 | 82 | 73 | 49 | 60 | 62 | 51 | 58 | 40 | 655 |
| $100-$250 million | 195 | 227 | 203 | 183 | 158 | 134 | 103 | 78 | 76 | 63 | 1,420 |
| $250-$500 million | 192 | 226 | 231 | 196 | 199 | 187 | 168 | 142 | 119 | 107 | 1,767 |
| $500-$1000 million | 208 | 239 | 245 | 233 | 209 | 207 | 175 | 178 | 147 | 114 | 1,955 |
| $1-$5 billion | 401 | 453 | 471 | 465 | 475 | 479 | 421 | 396 | 409 | 375 | 4,345 |
| $5-$20 billion | 150 | 191 | 210 | 210 | 218 | 222 | 191 | 198 | 216 | 216 | 2,022 |
| >=$20 billion | 70 | 86 | 89 | 89 | 105 | 114 | 102 | 99 | 107 | 104 | 965 |
| **Total** | 1,386 | 1,621 | 1,636 | 1,524 | 1,489 | 1,461 | 1,284 | 1,185 | 1,172 | 1,059 | 13,817 |

Panel B: IRS audit rates by IRS firm-asset-size group and year

| IRS firm-asset-size group | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|
| $5-$10 million | 2.61 | 2.81 | 2.52 | 2.43 | 1.75 | 1.69 | 1.26 | 1.40 | 1.15 | 1.07 |
| $10-$50 million | 9.86 | 10.76 | 13.10 | 10.11 | 6.64 | 5.91 | 5.33 | 4.45 | 3.74 | 4.52 |
| $50-$100 million | 13.96 | 13.72 | 18.61 | 20.38 | 14.98 | 10.75 | 10.74 | 9.87 | 9.70 | 10.48 |
| $100-$250 million | 13.27 | 12.87 | 16.38 | 22.52 | 18.83 | 12.40 | 13.41 | 10.43 | 9.32 | 9.57 |
| $250-$500 million | 15.51 | 15.66 | 16.99 | 22.10 | 21.41 | 15.55 | 12.95 | 11.34 | 8.74 | 10.46 |
| $500-$1000 million | 17.69 | 17.11 | 20.10 | 22.06 | 26.44 | 18.49 | 15.95 | 12.64 | 10.01 | 9.79 |
| $1-$5 billion | 26.36 | 26.88 | 30.25 | 30.03 | 36.40 | 28.29 | 21.98 | 17.65 | 13.92 | 12.09 |
| $5-$20 billion | 47.18 | 43.72 | 49.82 | 43.72 | 57.20 | 42.13 | 32.76 | 32.40 | 24.11 | 25.51 |
| >=$20 billion | 112.64 | 96.42 | 93.56 | 92.6 | 86.26 | 81.58 | 60.89 | 76.15 | 53.73 | 47.71 |

This table reports the sample distribution and IRS audit rates by IRS firm-asset-size group and year. Panel A reports the number of observations for each IRS firm-asset-size group-year intersection; Panel B reports the IRS audit rates, obtained from TRAC, by year for each IRS firm-asset-size group.

**Table 2** IRS material contract downloads

Panel A: Number of IRS material contract downloads and firm characteristics

| | (1) | (2) |
|---|---|---|
| | Dependent variable = *IRS_DOWNLOAD_CNT* | |
| *CASHETR* | 1.071 | 0.987 |
| | (1.52) | (1.44) |
| *GAAPETR* | -0.854* | -0.809* |
| | (-1.73) | (-1.70) |
| *BTD* | 1.163 | 0.862 |
| | (0.98) | (0.78) |
| *UTB* | 13.055** | 12.457** |
| | (2.32) | (2.31) |
| *DTA* | 4.749*** | 4.154*** |
| | (3.52) | (3.17) |
| *DTL* | -0.123 | 0.468 |
| | (-0.07) | (0.27) |
| *FOREIGN* | 0.292** | 0.281** |
| | (2.06) | (2.03) |
| *Ln(SIZE)* | 0.442*** | 0.404*** |
| | (8.43) | (7.67) |
| *MTB* | -0.069** | -0.061** |
| | (-2.57) | (-2.39) |
| *LEV* | 0.636 | 0.397 |
| | (1.03) | (0.65) |
| *R&D* | -3.223 | -3.043 |
| | (-1.39) | (-1.36) |
| *INV* | -1.524** | -1.608** |
| | (-2.03) | (-2.17) |
| *PPE* | -0.738 | -0.691 |
| | (-1.38) | (-1.32) |
| *ROA* | -0.591 | 0.280 |
| | (-0.44) | (0.21) |
| *NOL_C* | -1.080 | -0.796 |
| | (-0.65) | (-0.50) |
| *CASHETR* | 0.021 | -0.126 |
| | (0.04) | (-0.22) |
| *GROWTH* | 0.520 | 0.510 |
| | (1.05) | (1.07) |
| *INTANGIBLE* | 0.260 | 0.165 |
| | (0.55) | (0.35) |
| *Ln(NUM_CNT)* | | 0.435*** |
| | | (4.60) |
| Industry FE | Yes | Yes |
| Year FE | Yes | Yes |
| Observations | 12,121 | 12,121 |
| Pseudo R2 | 0.201 | 0.215 |

Panel B: Counts and proportions of IRS material contract downloads and of material contracts by type

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | **Count of IRS material contract downloads** | | **Count of material contracts (Ex. 10s)** | |
| **Contract type** | Frequency | Percentage | Frequency | Percentage |
| Employment | 2,923 | 52.48 | 42,505 | 62.10 |
| Credit or lease | 1,157 | 20.77 | 15,481 | 22.62 |
| Manufacturing and sales | 414 | 7.43 | 3,649 | 5.33 |
| Investment | 410 | 7.36 | 2,763 | 4.04 |
| Intangible | 170 | 3.05 | 703 | 1.03 |
| Stockholder | 202 | 3.63 | 1,885 | 2.75 |
| Other | 294 | 5.28 | 1,465 | 2.14 |
| **Total** | **5,570** | **100.00** | **68,451** | **100.00** |

Panel C: Number of IRS material contract downloads and IRS scrutiny, by contract type

| | (1) | (2) | (4) | (3) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| | Dependent variable = *IRS_DOWNLOAD_CNT* by contract type | | | | | | |
| **Contract type** | Employment | Credit or lease | Manufacturing and sales | Investment | Intangible | Stockholder | Other |
| *IRS_AUDIT_RATE* | 0.027** | 0.023*** | 0.026*** | 0.016** | 0.103** | -0.065 | 0.023 |
| | (2.26) | (7.93) | (2.89) | (2.20) | (2.00) | (-1.03) | (0.83) |
| *Ln(NUM_CNT) by type* | 0.397*** | 0.330*** | 0.046* | 0.459* | 0.819*** | 0.814** | 2.044*** |
| | (4.07) | (3.75) | (1.74) | (1.80) | (3.12) | (2.27) | (4.85) |
| Size group FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 9,107 | 6,314 | 1,514 | 1,585 | 395 | 1,111 | 997 |
| Pseudo R2 | 0.253 | 0.082 | 0.196 | 0.203 | 0.513 | 0.321 | 0.544 |

This table presents regression results and descriptive statistics for IRS downloads of material contracts from 2009 through June 2017, including for firms in the largest IRS-asset-size group. Panel A reports the Poisson regression results for the relation between the number of IRS downloads of material contracts and firms' tax-related variables; Panel B reports the distribution of contract types for the 5,570 IRS material contract downloads and for the 68,451 material contracts filed by firms from 2009 through June 2017; Panel C reports the Poisson regression results for the relation between IRS downloads and IRS scrutiny by contract type. In Panel C, we conduct within-contract-type analyses by constraining the sample to observations with at least one material contract of the given type in year *y*. Variables are defined in Appendix C. *z*-statistics reported in parentheses are based on standard errors clustered by firm. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

**Table 3** Summary statistics

Panel A: Proportion of firms with redacted material contracts by IRS firm-asset-size group and year

| IRS firm-asset-size group | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|
| $5-$10 million | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| $10-$50 million | 0.047 | 0.053 | 0.078 | 0.081 | 0.027 | 0.086 | 0.066 | 0.023 | 0.053 | 0.026 |
| $50-$100 million | 0.099 | 0.091 | 0.098 | 0.110 | 0.082 | 0.083 | 0.032 | 0.039 | 0.086 | 0.000 |
| $100-$250 million | 0.092 | 0.079 | 0.103 | 0.082 | 0.076 | 0.067 | 0.078 | 0.090 | 0.092 | 0.048 |
| $250-$500 million | 0.109 | 0.124 | 0.108 | 0.087 | 0.095 | 0.080 | 0.101 | 0.113 | 0.076 | 0.065 |
| $500-$1,000 million | 0.125 | 0.142 | 0.122 | 0.159 | 0.134 | 0.097 | 0.080 | 0.107 | 0.068 | 0.096 |
| $1-$5 billion | 0.117 | 0.148 | 0.130 | 0.120 | 0.097 | 0.104 | 0.102 | 0.091 | 0.061 | 0.083 |
| $5-$20 billion | 0.107 | 0.136 | 0.124 | 0.062 | 0.096 | 0.081 | 0.120 | 0.071 | 0.069 | 0.088 |
| >=$20 billion (dropped) | 0.071 | 0.070 | 0.067 | 0.101 | 0.095 | 0.088 | 0.127 | 0.091 | 0.103 | 0.087 |

Panel B: Descriptive statistics for measures of material contract redactions, IRS scrutiny, and control variables

| | Mean | Std. | Q1 | Median | Q3 |
|---|---|---|---|---|---|
| ***Final sample (N= 12,852)*** | | | | | |
| *REDACT_D* | 0.098 | 0.298 | 0.000 | 0.000 | 0.000 |
| *REDACT_FILE* | 0.139 | 0.487 | 0.000 | 0.000 | 0.000 |
| *REDACT_CNT* | 0.255 | 1.573 | 0.000 | 0.000 | 0.000 |
| *IRS_AUDIT_RATE* | 22.422 | 11.107 | 13.720 | 20.100 | 28.290 |
| *UTB* | 0.008 | 0.014 | 0.000 | 0.003 | 0.009 |
| *GAAPETR* | 0.295 | 0.183 | 0.203 | 0.316 | 0.374 |
| *FOREIGN* | 0.608 | 0.488 | 0.000 | 1.000 | 1.000 |
| *FLUIDITY* | 5.551 | 2.888 | 3.496 | 4.993 | 6.871 |
| *Ln(SIZE)* | 6.918 | 1.724 | 5.809 | 7.044 | 8.144 |
| *MTB* | 3.198 | 3.001 | 1.463 | 2.299 | 3.752 |
| *LEV* | 0.193 | 0.199 | 0.001 | 0.153 | 0.307 |
| *INTANGIBLE* | 0.235 | 0.238 | 0.030 | 0.167 | 0.374 |
| *R&D* | 0.028 | 0.048 | 0.000 | 0.000 | 0.033 |
| *CAPX* | 0.052 | 0.057 | 0.018 | 0.033 | 0.062 |
| *PPE* | 0.266 | 0.247 | 0.085 | 0.183 | 0.365 |
| *ROA* | 0.096 | 0.073 | 0.044 | 0.080 | 0.128 |
| *RETURN* | 0.219 | 0.447 | -0.062 | 0.146 | 0.401 |
| *RETVOL* | 0.025 | 0.011 | 0.017 | 0.023 | 0.030 |
| *Ln(ANALYST)* | 1.924 | 0.946 | 1.386 | 2.079 | 2.639 |
| *INST* | 0.640 | 0.337 | 0.405 | 0.763 | 0.902 |
| *CIC* | 0.092 | 0.290 | 0.000 | 0.000 | 0.000 |
| *Ln(NUM_FILE)* | 2.546 | 0.465 | 2.303 | 2.639 | 2.833 |
| *Ln(NUM_CNT)* | 1.683 | 0.605 | 1.386 | 1.609 | 2.079 |
| ***Subsample of ever-redacting firms (N=3,534)*** | | | | | |
| *REDACT_D* | 0.357 | 0.479 | 0.000 | 0.000 | 1.000 |
| *REDACT_FILE* | 0.505 | 0.824 | 0.000 | 0.000 | 1.000 |
| *REDACT_CNT* | 0.929 | 2.893 | 0.000 | 0.000 | 1.000 |
| *IRS_AUDIT_RATE* | 23.742 | 11.201 | 15.514 | 21.980 | 30.030 |
| *UTB* | 0.009 | 0.015 | 0.000 | 0.004 | 0.011 |
| *GAAPETR* | 0.286 | 0.186 | 0.178 | 0.309 | 0.374 |

| | | | | | |
|---|---|---|---|---|---|
| *FOREIGN* | 0.655 | 0.475 | 0.000 | 1.000 | 1.000 |
| *FLUIDITY* | 6.285 | 3.125 | 4.056 | 5.759 | 7.747 |
| *Ln(SIZE)* | 7.256 | 1.599 | 6.293 | 7.314 | 8.343 |
| *MTB* | 3.366 | 3.002 | 1.553 | 2.446 | 3.969 |
| *LEV* | 0.204 | 0.198 | 0.006 | 0.176 | 0.327 |
| *INTANGIBLE* | 0.224 | 0.233 | 0.030 | 0.154 | 0.348 |
| *R&D* | 0.037 | 0.057 | 0.000 | 0.003 | 0.060 |
| *CAPX* | 0.055 | 0.057 | 0.019 | 0.036 | 0.068 |
| *PPE* | 0.276 | 0.253 | 0.079 | 0.187 | 0.404 |
| *ROA* | 0.099 | 0.075 | 0.043 | 0.081 | 0.133 |
| *RETURN* | 0.228 | 0.456 | -0.060 | 0.147 | 0.415 |
| *RETVOL* | 0.025 | 0.010 | 0.018 | 0.023 | 0.030 |
| *Ln(ANALYST)* | 2.137 | 0.839 | 1.792 | 2.197 | 2.773 |
| *INST* | 0.679 | 0.324 | 0.491 | 0.798 | 0.913 |
| *CIC* | 0.104 | 0.305 | 0.000 | 0.000 | 0.000 |
| *Ln(NUM_FILE)* | 2.619 | 0.457 | 2.398 | 2.639 | 2.890 |
| *Ln(NUM_CNT)* | 1.815 | 0.645 | 1.386 | 1.792 | 2.303 |

Panel C: Correlations

| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *REDACT_D* | (1) | | | | | | | | | | | | | | | | | | | | | | |
| *REDACT_FILE* | (2) | **0.86** | | | | | | | | | | | | | | | | | | | | | |
| *REDACT_CNT* | (3) | **0.49** | **0.68** | | | | | | | | | | | | | | | | | | | | |
| *IRS_AUDIT_RATE* | (4) | **0.03** | **0.03** | **0.03** | | | | | | | | | | | | | | | | | | | |
| *UTB* | (5) | **0.02** | **0.02** | **0.02** | **0.10** | | | | | | | | | | | | | | | | | | |
| *GAAPETR* | (6) | **-0.02** | **-0.01** | **-0.01** | 0.00 | **-0.04** | | | | | | | | | | | | | | | | | |
| *FOREIGN* | (7) | 0.00 | 0.00 | -0.01 | **0.20** | **0.22** | -0.01 | | | | | | | | | | | | | | | | |
| *FLUIDITY* | (8) | **0.15** | **0.16** | **0.15** | **0.07** | 0.00 | **-0.05** | **-0.15** | | | | | | | | | | | | | | | |
| *Ln(SIZE)* | (9) | **0.03** | **0.03** | **0.02** | **0.64** | **0.14** | **-0.05** | **0.33** | **0.07** | | | | | | | | | | | | | | |
| *MTB* | (10) | **0.02** | **0.02** | 0.01 | **0.05** | **0.07** | -0.01 | **0.08** | 0.00 | **0.38** | | | | | | | | | | | | | |
| *LEV* | (11) | **0.03** | **0.04** | **0.05** | **0.26** | **-0.10** | **-0.03** | 0.00 | **0.10** | **0.25** | **0.14** | | | | | | | | | | | | |
| *INTANGIBLE* | (12) | **-0.03** | **-0.03** | **-0.02** | **0.14** | **0.01** | **0.01** | **0.20** | 0.01 | **0.25** | **0.05** | **0.35** | | | | | | | | | | | |
| *R&D* | (13) | **0.11** | **0.11** | **0.10** | **-0.10** | **0.31** | **-0.14** | **0.22** | **0.15** | **0.03** | **0.16** | **-0.23** | 0.01 | | | | | | | | | | |
| *CAPX* | (14) | **0.04** | **0.04** | **0.04** | **0.05** | **-0.11** | -0.01 | **-0.19** | **0.19** | **0.04** | **0.02** | **0.16** | **-0.28** | **-0.15** | | | | | | | | | |
| *PPE* | (15) | **0.03** | **0.03** | **0.04** | **0.11** | **-0.17** | **-0.05** | **-0.28** | **0.18** | **0.03** | **-0.06** | **0.33** | **-0.33** | **-0.30** | **0.74** | | | | | | | | |
| *ROA* | (16) | -0.01 | -0.01 | **-0.02** | **-0.04** | **0.01** | -0.01 | **-0.06** | **-0.02** | **0.19** | **0.38** | **-0.27** | **-0.14** | **0.04** | **0.08** | **-0.07** | | | | | | | |
| *RETURN* | (17) | **0.02** | **0.02** | **0.02** | **0.02** | **0.06** | **-0.05** | -0.01 | **-0.03** | **0.03** | **0.17** | **-0.03** | **-0.02** | **0.07** | **-0.04** | **-0.03** | **0.07** | | | | | | |
| *RETVOL* | (18) | **0.04** | **0.04** | **0.04** | **-0.29** | 0.00 | **-0.02** | **-0.18** | **0.08** | **-0.52** | **-0.19** | **-0.12** | **-0.20** | **0.09** | **0.05** | **0.03** | **-0.10** | **0.17** | | | | | |
| *Ln(ANALYST)* | (19) | **0.06** | **0.06** | **0.06** | **0.56** | **0.13** | **-0.02** | **0.24** | **0.16** | **0.80** | **0.26** | **0.21** | **0.21** | **0.07** | **0.12** | **0.06** | **0.10** | **-0.05** | **-0.32** | | | | |
| *INST* | (20) | **0.03** | **0.04** | **0.04** | **0.25** | **0.09** | **0.03** | **0.25** | **-0.04** | **0.48** | **0.14** | **0.08** | **0.17** | **0.06** | **-0.08** | **-0.10** | **0.03** | **-0.02** | **-0.32** | **0.48** | | | |
| *CIC* | (21) | **-0.02** | -0.01 | **-0.01** | **0.47** | **0.09** | **-0.04** | **0.19** | **-0.03** | **0.43** | **0.07** | **0.11** | **0.06** | **-0.04** | **-0.05** | **-0.02** | 0.00 | **-0.04** | **-0.18** | **0.31** | **0.11** | | |
| *Ln(NUM_FILE)* | (22) | **0.09** | **0.10** | **0.10** | **-0.09** | 0.00 | **-0.02** | **0.03** | **0.18** | **0.17** | **0.02** | **0.21** | **0.12** | **-0.04** | **0.04** | **0.08** | **-0.06** | **-0.02** | **0.05** | **0.18** | **0.07** | **0.09** | |
| *Ln(NUM_CNT)* | (23) | **0.19** | **0.21** | **0.23** | **0.21** | **0.04** | 0.00 | **0.07** | **0.06** | **0.13** | -0.01 | **0.13** | **0.05** | **-0.01** | **0.03** | **0.05** | **-0.09** | **0.05** | **0.05** | **0.16** | **0.04** | **0.12** | **0.16** |

This table reports summary statistics for Eq. (1) variables. All variables are defined in Appendix C. Panel A reports the proportion of firms with redacted material contracts for each IRS firm-asset-size-year intersection; Panel B reports descriptive statistics for Eq. (1) variables for the final sample excluding firms in the largest IRS asset-size group and for the subsample of firms that have ever redacted during the sample period; Panel C reports Pearson correlations among variables for the final sample. A correlation coefficient in boldface indicates statistical significance at 5% or lower.

**Table 4** Redactions in material contracts and IRS scrutiny

| Dependent variable = | (1) *REDACT_D* | (2) | (3) *REDACT_FILE* | (4) | (5) *REDACT_CNT* | (6) | (7) *REDACT_D* | (8) *REDACT_FILE* | (9) *REDACT_CNT* |
|---|---|---|---|---|---|---|---|---|---|
| | Final sample | | | | | | Subsample of ever-redacting firms | | |
| | Logit | LPM | Poisson | | | | Logit | Poisson | |
| *IRS_AUDIT_RATE* | 0.038*** | 0.002** | 0.031*** | 0.026** | 0.028** | 0.027** | 0.044*** | 0.027*** | 0.027*** |
| | (3.00) | (2.57) | (2.86) | (2.34) | (2.54) | (2.28) | (3.24) | (3.02) | (2.98) |
| *UTB* | -0.445 | 0.113 | 0.061 | -0.039 | -0.916 | 3.481 | 0.275 | 0.193 | -0.652 |
| | (-0.16) | (0.35) | (0.03) | (-0.01) | (-0.40) | (0.82) | (0.09) | (0.10) | (-0.30) |
| *GAAPETR* | -0.123 | -0.005 | -0.042 | -0.016 | -0.041 | -0.003 | 0.018 | 0.146 | 0.124 |
| | (-1.40) | (-0.75) | (-0.56) | (-0.21) | (-0.55) | (-0.04) | (0.07) | (1.08) | (0.86) |
| *FOREIGN* | -0.079 | 0.001 | -0.045 | 0.118 | -0.026 | 0.185 | -0.260** | -0.141* | -0.131* |
| | (-0.59) | (0.04) | (-0.42) | (0.64) | (-0.23) | (0.79) | (-2.15) | (-1.91) | (-1.69) |
| *FLUIDITY* | 0.173*** | -0.001 | 0.133*** | -0.018 | 0.142*** | -0.008 | 0.106*** | 0.062*** | 0.068*** |
| | (9.31) | (-0.65) | (9.77) | (-0.80) | (9.83) | (-0.32) | (5.23) | (5.35) | (5.57) |
| *Ln(SIZE)* | -0.004 | -0.020** | -0.020 | -0.257* | 0.017 | -0.314** | -0.103 | -0.086 | -0.066 |
| | (-0.03) | (-2.25) | (-0.23) | (-1.95) | (0.18) | (-2.32) | (-0.96) | (-1.31) | (-0.94) |
| *MTB* | -0.006 | 0.002 | -0.011 | 0.012 | -0.018 | 0.010 | 0.047* | 0.019 | 0.018 |
| | (-0.29) | (1.07) | (-0.64) | (0.54) | (-0.96) | (0.46) | (1.92) | (1.38) | (1.34) |
| *LEV* | 0.679* | -0.019 | 0.595** | -0.191 | 0.770** | -0.108 | 0.550 | 0.377* | 0.511** |
| | (1.86) | (-0.64) | (2.22) | (-0.65) | (2.57) | (-0.31) | (1.44) | (1.84) | (2.23) |
| *INTANGIBLE* | -1.117*** | 0.038 | -0.906*** | 0.433 | -0.859*** | 0.417 | -0.301 | -0.205 | -0.171 |
| | (-3.95) | (1.33) | (-4.02) | (1.51) | (-3.52) | (1.18) | (-1.05) | (-1.26) | (-0.97) |
| *R&D* | 4.493*** | -0.028 | 3.300*** | 0.354 | 3.243*** | -0.699 | 2.967** | 1.721** | 1.637** |
| | (3.64) | (-0.11) | (3.44) | (0.17) | (3.25) | (-0.30) | (2.46) | (2.50) | (2.30) |
| *CAPX* | 0.801 | 0.011 | 0.704 | 0.246 | 0.404 | 0.647 | 0.936 | 0.739 | 0.194 |
| | (0.57) | (0.11) | (0.62) | (0.22) | (0.33) | (0.60) | (0.68) | (0.91) | (0.21) |
| *PPE* | -0.370 | -0.037 | -0.176 | -0.352 | -0.287 | -0.344 | -0.286 | -0.078 | -0.037 |
| | (-0.79) | (-0.83) | (-0.47) | (-0.73) | (-0.69) | (-0.67) | (-0.68) | (-0.30) | (-0.12) |
| *ROA* | -0.521 | 0.019 | -0.329 | 0.146 | -0.166 | 0.474 | -0.975 | -0.505 | -0.237 |
| | (-0.68) | (0.32) | (-0.54) | (0.23) | (-0.26) | (0.72) | (-1.27) | (-1.11) | (-0.51) |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *RETURN* | 0.187** | 0.017*** | 0.165** | 0.232*** | 0.177** | 0.231*** | 0.148 | 0.092 | 0.107 |
| | (2.14) | (2.74) | (2.29) | (2.93) | (2.33) | (2.73) | (1.35) | (1.45) | (1.59) |
| *RETVOL* | 8.264 | -0.110 | 7.201 | 1.745 | 7.044 | -0.247 | 15.815** | 8.363** | 6.590 |
| | (1.49) | (-0.28) | (1.55) | (0.31) | (1.40) | (-0.04) | (2.49) | (2.16) | (1.54) |
| *Ln(ANALYST)* | 0.258** | 0.002 | 0.251*** | 0.099 | 0.238** | 0.122 | 0.034 | 0.048 | 0.032 |
| | (2.37) | (0.24) | (2.71) | (0.71) | (2.47) | (0.88) | (0.30) | (0.69) | (0.42) |
| *INST* | 0.125 | 0.010 | 0.140 | 0.168 | 0.150 | 0.189 | 0.117 | 0.086 | 0.133 |
| | (0.70) | (0.45) | (1.01) | (0.65) | (1.05) | (0.73) | (0.65) | (0.83) | (1.18) |
| *CIC* | -0.170 | 0.006 | -0.118 | 0.076 | -0.257 | -0.125 | -0.125 | -0.047 | -0.218 |
| | (-0.77) | (0.30) | (-0.63) | (0.30) | (-1.41) | (-0.49) | (-0.52) | (-0.29) | (-1.37) |
| *Ln(NUM_FILE)* | 0.911*** | 0.029*** | 0.811*** | 0.421*** | | | 0.582*** | 0.419*** | |
| | (7.29) | (3.52) | (7.77) | (3.36) | | | (4.31) | (4.85) | |
| *Ln(NUM_CNT)* | | | | | 0.740*** | 0.618*** | | | 0.572*** |
| | | | | | (11.69) | (8.23) | | | (10.64) |
| Size group FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry FE | Yes | No | Yes | No | Yes | No | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm FE | No | Yes | No | Yes | No | Yes | No | No | No |
| Observations | 12,852 | 12,852 | 12,852 | 12,852 | 12,852 | 12,852 | 3,534 | 3,534 | 3,534 |
| Pseudo/Adj R2 | 0.129 | 0.346 | 0.138 | 0.155 | 0.169 | 0.205 | 0.101 | 0.082 | 0.120 |

This table reports the regression results from estimating Eq. (1) to test for a relation between material contract redactions and IRS scrutiny (*IRS_AUDIT_RATE*). Columns (1)-(6) use the final sample and columns (7)-(9) use the subsample of firms that have ever redacted during the sample period. When the dependent variable is *REDACT_D*, we use logit regression, and when the dependent variable is *REDACT_FILE* or *REDACT_CNT*, we use Poisson regression. Variables are defined in Appendix C. *z*-statistics (*t*-statistics) reported in parentheses are based on standard errors clustered by firm. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

**Table 5** Cross-sectional analyses

Panel A: Subsamples partitioned by tax uncertainty (*UTB*)

| Dependent variable = | (1) *REDACT_D* | (2) *REDACT_D* | (3) *REDACT_FILE* | (4) *REDACT_FILE* | (5) *REDACT_CNT* | (6) *REDACT_CNT* |
|---|---|---|---|---|---|---|
| | High tax uncertainty | Low tax uncertainty | High tax uncertainty | Low tax uncertainty | High tax uncertainty | Low tax uncertainty |
| *IRS_AUDIT_RATE* | 0.071*** | 0.002 | 0.055*** | 0.002 | 0.041*** | 0.005 |
| | (4.00) | (0.12) | (3.70) | (0.14) | (2.74) | (0.34) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes |
| Size group FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 6,318 | 6,534 | 6,318 | 6,534 | 6,318 | 6,534 |
| Pseudo R2 | 0.138 | 0.141 | 0.145 | 0.141 | 0.187 | 0.165 |
| Difference in *IRS_AUDIT_RATE* | 0.069*** | | 0.053** | | 0.036* | |
| Z-statistics | 2.83 | | 2.57 | | 1.71 | |

Panel B: Subsamples partitioned by GAAP ETRs (*GAAPETR*)

| Dependent variable = | (1) *REDACT_D* | (2) *REDACT_D* | (3) *REDACT_FILE* | (4) *REDACT_FILE* | (5) *REDACT_CNT* | (6) *REDACT_CNT* |
|---|---|---|---|---|---|---|
| | Low GAAPETR | High GAAPETR | Low GAAPETR | High GAAPETR | Low GAAPETR | High GAAPETR |
| *IRS_AUDIT_RATE* | 0.048*** | 0.026 | 0.044*** | 0.010 | 0.043*** | 0.006 |
| | (2.75) | (1.32) | (2.94) | (0.70) | (2.84) | (0.38) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes |
| Size group FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 6,394 | 6,458 | 6,394 | 6,458 | 6,394 | 6,458 |
| Pseudo R2 | 0.139 | 0.146 | 0.140 | 0.153 | 0.174 | 0.198 |
| Difference in *IRS_AUDIT_RATE* | 0.022 | | 0.034* | | 0.037* | |
| Z-statistics | 0.84 | | 1.64 | | 1.69 | |

Panel C: Subsamples partitioned by the presence of foreign subsidiaries

| Dependent variable = | (1) *REDACT_D* | (2) *REDACT_D* | (3) *REDACT_FILE* | (4) *REDACT_FILE* | (5) *REDACT_CNT* | (6) *REDACT_CNT* |
|---|---|---|---|---|---|---|
| | MNCs | Domestic firms | MNCs | Domestic firms | MNCs | Domestic firms |
| *IRS_AUDIT_RATE* | 0.045*** | 0.009 | 0.041*** | 0.006 | 0.036** | -0.002 |
| | (2.80) | (0.40) | (2.97) | (0.36) | (2.51) | (-0.13) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes |
| Size group FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 7,814 | 5,038 | 7,814 | 5,038 | 7,814 | 5,038 |
| Pseudo R2 | 0.106 | 0.197 | 0.108 | 0.188 | 0.158 | 0.279 |
| Difference in *IRS_AUDIT_RATE* | 0.036 | | 0.035* | | 0.038* | |
| Z-statistics | 1.30 | | 1.62 | | 1.81 | |

Panel D: Subsamples partitioned by product market competition (*FLUIDITY*)

| Dependent variable = | (1) *REDACT_D* | (2) *REDACT_D* | (3) *REDACT_FILE* | (4) *REDACT_FILE* | (5) *REDACT_CNT* | (6) *REDACT_CNT* |
|---|---|---|---|---|---|---|
| | High product market competition | Low product market competition | High product market competition | Low product market competition | High product market competition | Low product market competition |
| *IRS_AUDIT_RATE* | 0.046*** | 0.024 | 0.035** | 0.014 | 0.039*** | -0.003 |
| | (2.64) | (1.15) | (2.53) | (0.67) | (2.85) | (-0.14) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes |
| Size group FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 6,414 | 6,438 | 6,414 | 6,438 | 6,414 | 6,438 |
| Pseudo R2 | 0.165 | 0.091 | 0.164 | 0.091 | 0.201 | 0.114 |
| Difference in *IRS_AUDIT_RATE* | 0.022 | | 0.021 | | 0.042* | |
| Z-statistics | 0.81 | | 0.84 | | 1.65 | |

This table reports the results from estimating Eq. (1) for subsamples of firms. In Panel A, we divide our sample into high (low)-tax-uncertainty groups based on the median unrecognized tax benefit balance (*UTB*); in Panel B, we divide our sample into high (low)-tax-avoidance groups based on median GAAP ETRs (*GAAPETR*); in Panel C, we divide our sample into MNCs with foreign subsidiaries and domestic firms without foreign subsidiaries; in Panel D, we divide our sample into groups with high (low) product market competition based on the median *FLUIDITY*. When the dependent variable is *REDACT_D*, we estimate Eq. (1) using logit regression, and when the dependent variable is *REDACT_FILE* or *REDACT_CNT*, we use Poisson regression. Variables are defined in Appendix C. *z*-statistics reported in parentheses are based on standard errors clustered by firm. We also report the difference between the coefficient estimates across subsamples using asymptotic *z*-statistics in the last two rows. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

**Table 6** Alternative IRS scrutiny measures

| Dependent variable = | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *REDACT_D* | | | | *REDACT_FILE* | | | | *REDACT_CNT* | | | |
| | Final sample 2009-2018 | | Alternative sample 1994-2000 | | Final sample 2009-2018 | | Alternative sample 1994-2000 | | Final sample 2009-2018 | | Alternative sample 1994-2000 | |
| *PROXIMITY* | 0.030* | | | | 0.046*** | | | | 0.095*** | | | |
| | (1.65) | | | | (2.94) | | | | (4.74) | | | |
| *IRS_EXPOSURE* | | 75.915* | | | | 91.242** | | | | 90.933** | | |
| | | (1.75) | | | | (2.48) | | | | (2.43) | | |
| *DISTRICT_AUDIT_RATE* | | | 0.317** | | | | 0.304** | | | | 0.469** | |
| | | | (2.06) | | | | (1.99) | | | | (2.02) | |
| *DISTRICT/SIZE_AUDIT_RATE* | | | | 0.030*** | | | | 0.029*** | | | | 0.022*** |
| | | | | (3.73) | | | | (4.12) | | | | (3.23) |
| Control variable | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Size group FE | No | No | No | Yes | No | No | No | Yes | No | No | No | Yes |
| District FE | No | No | Yes | Yes | No | No | Yes | Yes | No | No | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 12,852 | 12,852 | 14,842 | 14,842 | 12,852 | 12,852 | 14,842 | 14,842 | 12,852 | 12,852 | 14,842 | 14,842 |
| Pseudo R2 | 0.121 | 0.122 | 0.145 | 0.151 | 0.129 | 0.129 | 0.134 | 0.161 | 0.142 | 0.143 | 0.165 | 0.170 |

This table reports the results from tests for a relation between material contract redactions and IRS scrutiny using alternative IRS scrutiny measures. *PROXIMITY* is the natural logarithm of the geodesic distance (in miles), multiplied by -1, between the firm's headquarters and the closest IRS regional office. *IRS_EXPOSURE* is the number of sentences in the 10-K with references to the IRS divided by the total number of sentences in the 10-K. *DISTRICT_AUDIT_RATE* is the number of corporate tax returns for a given IRS district audited by the IRS in the fiscal year divided by the number of the corporate tax returns received in the same IRS district in the previous year, multiplied by 100; *DISTRICT/SIZE_AUDIT_RATE* is the number of corporate tax returns audited by the IRS in a given IRS district for a given IRS firm-asset-size group for fiscal year *y* divided by the number of the corporate tax returns received for the same IRS district-asset-size group in the previous year, multiplied by 100. Other variables are defined in Appendix C. When the dependent variable is *REDACT_D*, we use logit regression and when the dependent variable is *REDACT_FILE* or *REDACT_CNT*, we use Poisson regression. *z*-statistics reported in parentheses are based on standard errors clustered by firm. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

**Table 7** Robustness tests

Panel A: Using *REDACT_D* as the dependent variable

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| | Dependent variable = *REDACT_D* | | | | | | |
| | AT decile indicators | Ln(AT) | Ln(SALES) | TREND | Nonlinear TREND | Excluding obs. close to the asset threshold | Pseudo IRS audit rate |
| *IRS_AUDIT_RATE* | 0.029*** | 0.038*** | 0.038*** | 0.046*** | 0.046*** | 0.039*** | -0.002 |
| | (2.63) | (2.99) | (3.03) | (5.45) | (4.61) | (2.97) | (-0.29) |
| *UTB* | -2.535 | -0.440 | -0.343 | -0.256 | -0.257 | 0.077 | -0.353 |
| | (-0.76) | (-0.16) | (-0.12) | (-0.09) | (-0.09) | (0.03) | (-0.13) |
| *GAAPETR* | -0.256*** | -0.123 | -0.119 | -0.138 | -0.138 | -0.128 | -0.119 |
| | (-2.86) | (-1.40) | (-1.34) | (-1.57) | (-1.57) | (-1.41) | (-1.36) |
| *FOREIGN* | 0.025 | -0.078 | -0.060 | -0.084 | -0.084 | -0.077 | -0.083 |
| | (0.18) | (-0.58) | (-0.45) | (-0.63) | (-0.63) | (-0.56) | (-0.62) |
| *FLUIDITY* | 0.347*** | 0.173*** | 0.170*** | 0.159*** | 0.159*** | 0.170*** | 0.173*** |
| | (13.29) | (9.31) | (9.03) | (9.07) | (9.01) | (8.76) | (9.29) |
| *Ln(SIZE)/Ln(AT)/Ln(SALES)* | -0.162 | -0.016 | -0.183* | -0.007 | -0.007 | 0.002 | -0.002 |
| | (-1.39) | (-0.11) | (-1.93) | (-0.06) | (-0.07) | (0.02) | (-0.02) |
| *MTB* | 0.003 | -0.007 | -0.005 | -0.007 | -0.007 | -0.008 | -0.006 |
| | (0.14) | (-0.36) | (-0.25) | (-0.34) | (-0.34) | (-0.35) | (-0.30) |
| *LEV* | 1.266*** | 0.685* | 0.661* | 0.776** | 0.776** | 0.787** | 0.672* |
| | (3.23) | (1.91) | (1.87) | (2.14) | (2.14) | (2.07) | (1.84) |
| *INTANGIBLE* | -2.355*** | -1.118*** | -1.177*** | -1.112*** | -1.113*** | -1.033*** | -1.120*** |
| | (-7.54) | (-3.91) | (-4.14) | (-3.92) | (-3.92) | (-3.65) | (-3.94) |
| *R&D* | 8.331*** | 4.477*** | 4.139*** | 4.808*** | 4.808*** | 4.265*** | 4.513*** |
| | (5.86) | (3.61) | (3.35) | (3.92) | (3.92) | (3.29) | (3.65) |
| *CAPX* | 2.608* | 0.791 | 0.757 | 0.779 | 0.781 | 0.880 | 0.817 |
| | (1.81) | (0.56) | (0.53) | (0.55) | (0.55) | (0.60) | (0.58) |
| *PPE* | -0.440 | -0.369 | -0.427 | -0.350 | -0.351 | -0.296 | -0.383 |
| | (-0.96) | (-0.78) | (-0.93) | (-0.74) | (-0.74) | (-0.61) | (-0.81) |
| *ROA* | -1.603* | -0.533 | -0.409 | -0.494 | -0.494 | -0.702 | -0.528 |
| | (-1.92) | (-0.75) | (-0.57) | (-0.64) | (-0.64) | (-0.86) | (-0.69) |
| *RETURN* | 0.354*** | 0.186** | 0.185** | 0.180** | 0.180** | 0.183** | 0.182** |
| | (3.45) | (2.21) | (2.19) | (2.19) | (2.18) | (1.97) | (2.09) |
| *RETVOL* | 7.974 | 8.255 | 7.697 | 6.755 | 6.724 | 8.494 | 8.326 |
| | (1.32) | (1.54) | (1.44) | (1.32) | (1.28) | (1.46) | (1.49) |
| *Ln(ANALYST)* | 0.416*** | 0.259** | 0.283*** | 0.280*** | 0.281*** | 0.286** | 0.250** |
| | (3.54) | (2.45) | (2.78) | (2.59) | (2.60) | (2.47) | (2.31) |
| *INST* | 0.121 | 0.124 | 0.122 | 0.094 | 0.095 | 0.134 | 0.118 |
| | (0.64) | (0.70) | (0.69) | (0.54) | (0.53) | (0.74) | (0.67) |
| *CIC* | -0.673*** | -0.164 | -0.038 | -0.156 | -0.156 | -0.246 | -0.157 |
| | (-2.59) | (-0.71) | (-0.17) | (-0.70) | (-0.70) | (-1.08) | (-0.71) |
| *Ln(NUM_FILE)* | 1.563*** | 0.911*** | 0.923*** | 0.629*** | 0.629*** | 0.926*** | 0.884*** |
| | (10.61) | (7.30) | (7.41) | (6.27) | (6.26) | (7.14) | (7.04) |
| *TREND* | | | | 0.035* | 0.033 | | |
| | | | | (1.69) | (0.46) | | |
| *TREND*TREND* | | | | | 0.000 | | |
| | | | | | (0.03) | | |
| AT decile/Size group FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | No | No | Yes | Yes |
| Observations | 12,852 | 12,852 | 12,852 | 12,852 | 12,852 | 11,697 | 12,852 |
| Pseudo R2 | 0.128 | 0.129 | 0.131 | 0.124 | 0.124 | 0.125 | 0.128 |

Panel B: Using *REDACT_CNT* as the dependent variable

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| | Dependent variable = *REDACT_CNT* | | | | | | |
| | AT decile indicators | Ln(AT) | Ln(SALES) | TREND | Nonlinear TREND | Excluding obs. close to the asset threshold | Pseudo IRS audit rate |
| *IRS_AUDIT_RATE* | 0.022** | 0.028** | 0.028*** | 0.015** | 0.011** | 0.033*** | -0.005 |
| | (2.45) | (2.55) | (2.61) | (2.31) | (2.20) | (2.84) | (-1.07) |
| *UTB* | 1.885 | -0.914 | -0.933 | -0.494 | -0.503 | -1.026 | -0.776 |
| | (0.80) | (-0.39) | (-0.41) | (-0.21) | (-0.22) | (-0.46) | (-0.34) |
| *GAAPETR* | -0.063 | -0.042 | -0.042 | -0.033 | -0.033 | -0.056 | -0.041 |
| | (-0.73) | (-0.55) | (-0.55) | (-0.42) | (-0.42) | (-0.74) | (-0.56) |
| *FOREIGN* | 0.067 | -0.026 | -0.007 | -0.033 | -0.034 | -0.024 | -0.034 |
| | (0.63) | (-0.23) | (-0.06) | (-0.29) | (-0.29) | (-0.20) | (-0.30) |
| *FLUIDITY* | 0.152*** | 0.143*** | 0.137*** | 0.138*** | 0.137*** | 0.139*** | 0.141*** |
| | (9.26) | (9.87) | (9.27) | (10.33) | (10.20) | (9.25) | (9.76) |
| *Ln(SIZE)/Ln(AT)/Ln(SALES)* | -0.240** | 0.018 | -0.178** | 0.005 | 0.008 | 0.054 | 0.018 |
| | (-2.57) | (0.15) | (-1.97) | (0.05) | (0.09) | (0.55) | (0.20) |
| *MTB* | 0.015 | -0.016 | -0.014 | -0.017 | -0.018 | -0.023 | -0.017 |
| | (0.87) | (-1.02) | (-0.93) | (-0.96) | (-0.98) | (-1.14) | (-0.92) |
| *LEV* | 0.693** | 0.753** | 0.730** | 0.774*** | 0.775*** | 0.935*** | 0.759** |
| | (2.38) | (2.56) | (2.58) | (2.58) | (2.58) | (2.92) | (2.54) |
| *INTANGIBLE* | -0.956*** | -0.853*** | -0.907*** | -0.864*** | -0.865*** | -0.782*** | -0.863*** |
| | (-3.93) | (-3.43) | (-3.70) | (-3.52) | (-3.54) | (-3.25) | (-3.52) |
| *R&D* | 1.923* | 3.279*** | 2.966*** | 3.408*** | 3.412*** | 3.176*** | 3.221*** |
| | (1.78) | (3.27) | (2.99) | (3.40) | (3.41) | (3.01) | (3.23) |
| *CAPX* | 0.790 | 0.422 | 0.358 | 0.317 | 0.282 | 0.637 | 0.423 |
| | (0.73) | (0.35) | (0.29) | (0.26) | (0.23) | (0.49) | (0.35) |
| *PPE* | 0.291 | -0.289 | -0.313 | -0.265 | -0.265 | -0.280 | -0.303 |
| | (0.88) | (-0.69) | (-0.77) | (-0.63) | (-0.63) | (-0.64) | (-0.73) |
| *ROA* | 0.134 | -0.124 | 0.033 | -0.071 | -0.070 | -0.512 | -0.178 |
| | (0.22) | (-0.21) | (0.06) | (-0.11) | (-0.11) | (-0.81) | (-0.28) |
| *RETURN* | 0.217*** | 0.181** | 0.174** | 0.158** | 0.159** | 0.148* | 0.172** |
| | (2.62) | (2.47) | (2.39) | (2.23) | (2.24) | (1.85) | (2.26) |
| *RETVOL* | 10.258* | 6.805 | 6.203 | 4.814 | 5.413 | 7.041 | 7.008 |
| | (1.91) | (1.40) | (1.28) | (1.03) | (1.13) | (1.35) | (1.38) |
| *Ln(ANALYST)* | 0.311*** | 0.242*** | 0.272*** | 0.235** | 0.233** | 0.250** | 0.230** |
| | (3.26) | (2.61) | (3.00) | (2.44) | (2.43) | (2.42) | (2.40) |
| *INST* | 0.214 | 0.151 | 0.153 | 0.146 | 0.146 | 0.160 | 0.149 |
| | (1.33) | (1.06) | (1.07) | (1.02) | (1.02) | (1.09) | (1.04) |
| *CIC* | -0.817*** | -0.261 | -0.136 | -0.242 | -0.243 | -0.308 | -0.240 |
| | (-3.76) | (-1.39) | (-0.71) | (-1.32) | (-1.33) | (-1.63) | (-1.32) |
| *Ln(NUM_CNT)* | 1.344*** | 0.739*** | 0.750*** | 0.725*** | 0.728*** | 0.758*** | 0.744*** |
| | (17.74) | (11.67) | (11.87) | (11.59) | (11.60) | (11.26) | (11.73) |
| *TREND* | | | | 0.025 | 0.066 | | |
| | | | | (1.36) | (1.03) | | |
| *TREND*TREND* | | | | | -0.004 | | |
| | | | | | (-0.68) | | |
| AT decile/Size group FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | No | No | Yes | Yes |
| Observations | 12,852 | 12,852 | 12,852 | 12,852 | 12,852 | 11,697 | 12,852 |
| Pseudo R2 | 0.169 | 0.170 | 0.171 | 0.166 | 0.166 | 0.166 | 0.169 |

This table reports results from estimating Eq. (1) to test the robustness of the relation between material contract redactions and IRS scrutiny. Panel A reports logit regression results using *REDACT_D* as the dependent variable; Panel B reports Poisson regression results using *REDACT_CNT* as the dependent variable. Variables are defined in Appendix C. *z*-statistics reported in parentheses are based on standard errors clustered by firm. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

**Table 8** Types of material contracts with redactions

Panel A: Distributions of material contracts and contracts with redactions in our final sample, by type

| | Material contracts | | Material contracts with redactions | | Proportion of contracts with redactions |
|---|---|---|---|---|---|
| **Contract type** | Frequency | Percentage | Frequency | Percentage | |
| Employment | 41,474 | 61.15 | 196 | 5.97 | 0.0047 |
| Credit or lease | 16,064 | 23.68 | 442 | 13.46 | 0.0275 |
| Manufacturing and sales | 3,497 | 5.16 | 1,765 | 53.76 | 0.5047 |
| Investment | 2,814 | 4.15 | 281 | 8.56 | 0.0999 |
| Intangible | 641 | 0.95 | 455 | 13.86 | 0.7098 |
| Stockholder | 1,896 | 2.80 | 70 | 2.13 | 0.0369 |
| Other | 1,442 | 2.13 | 74 | 2.25 | 0.0513 |
| **Total** | **67,828** | **100.00** | **3,283** | **100.00** | **0.0484** |

Panel B: Contract type and IRS scrutiny

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| | Dependent variable = *REDACT_CNT* by contract type | | | | | | |
| **Contract type** | Employment | Credit or lease | Manufacturing and sales | Investment | Intangible | Stockholder | Other |
| *IRS_AUDIT_RATE* | 0.078** | 0.054* | 0.029* | 0.090*** | 0.055*** | 0.004 | 0.041 |
| | (2.33) | (1.93) | (1.96) | (2.79) | (3.74) | (0.05) | (0.66) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Size group FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 9,366 | 6,676 | 1,479 | 1,616 | 377 | 1,142 | 993 |
| Pseudo R2 | 0.165 | 0.191 | 0.125 | 0.152 | 0.333 | 0.182 | 0.459 |

This table reports the regression results by material contract type. Panel A reports the distributions of contract types for material contracts and for contracts with redactions in our final sample, as well as the proportion of contracts with redactions for each contract type; Panel B reports the Poisson regression results from estimating Eq. (1) by contract type. In Panel B, we conduct within-contract-type analyses by constraining the sample to observations with at least one material contract of the given type in year *y*. Variables are defined in Appendix C. *z*-statistics reported in parentheses are based on standard errors clustered by firm. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

**Table 9** Schedule UTP and the 2013 IRS budget cut

Panel A: Schedule UTP and material contract redactions

| Dependent variable = | (1) *REDACT_D* | (2) *REDACT_FILE* | (3) *REDACT_CNT* |
|---|---|---|---|
| *TREAT_UTP* | 0.272 | 0.251 | 0.237 |
| | (1.14) | (1.34) | (1.23) |
| *POST_UTP* | 0.251 | 0.174 | 0.183 |
| | (1.10) | (0.93) | (1.02) |
| *TREAT_UTP×POST_UTP* | -0.635** | -0.517** | -0.499** |
| | (-2.47) | (-2.45) | (-2.50) |
| Control variable | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes |
| Observations | 12,852 | 12,852 | 12,852 |
| Pseudo R2 | 0.195 | 0.182 | 0.144 |

Panel B: IRS budget cut and material contract redactions

| Dependent variable = | (1) *REDACT_D* | (2) *REDACT_FILE* | (3) *REDACT_CNT* |
|---|---|---|---|
| *TREAT_IRS_EXPOSURE* | 0.210 | 0.287*** | 0.221* |
| | (1.60) | (2.72) | (1.96) |
| *TREAT_IRS_EXPOSURE×POST_IRS_CUT* | -0.195 | -0.281** | -0.268* |
| | (-1.28) | (-2.18) | (-1.74) |
| Control variables | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes |
| Observations | 12,852 | 12,852 | 12,852 |
| Pseudo R2 | 0.149 | 0.171 | 0.270 |

This table reports the regression results from testing for an effect of Schedule UTP reporting requirements (Panel A) and the 2013 IRS budget cut (Panel B) on firms' redaction decisions. *TREAT_UTP* is an indicator variable equal to 1 for the treated firms, and 0 otherwise. Treated firms are defined as those that are eventually subject to the Schedule UTP reporting requirement (i.e., those that meet the asset threshold and have recorded reserves in their financial statements). *POST_UTP* is an indicator variable equal to 1 for firm-years on or after the treated firm starts to report uncertain tax positions under Schedule UTP; for control firms never subject to Schedule UTP, *POST_UTP* is equal to 1 beginning in a random year between 2010 and 2018, and 0 otherwise. *TREAT_IRS_EXPOSURE* is an indicator variable equal to 1 for firms with *IRS_EXPOSURE* in the top tercile in 2012, and 0 otherwise. *POST_IRS_CUT* is an indicator variable equal to 1 for years after 2012, and 0 otherwise. Other variables are defined in Appendix C. When the dependent variable is *REDACT_D*, we estimate the model using logit regression, and when the dependent variable is *REDACT_FILE* or *REDACT_CNT*, we use Poisson regression. *z*-statistics reported in parentheses are based on standard errors clustered by firm. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

**Table 10** Redactions in material contracts and ex-post IRS enforcement

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Dependent variable = | *AUDIT_REF$_{y+1}$* | | | *SETTLEMENT_D$_{y+1}$* | | |
| *REDACT_D* | -0.323** | | | -0.175* | | |
| | (-2.09) | | | (-1.79) | | |
| *REDACT_FILE* | | -0.252** | | | -0.141* | |
| | | (-2.22) | | | (-1.94) | |
| *REDACT_CNT* | | | -0.123* | | | -0.085** |
| | | | (-1.96) | | | (-1.98) |
| *AUDIT_REF$_y$* | 5.380*** | 5.382*** | 5.382*** | | | |
| | (46.47) | (46.45) | (46.45) | | | |
| *SETTLEMENT_D$_y$* | | | | 2.195*** | 2.194*** | 2.194*** |
| | | | | (29.98) | (29.97) | (29.94) |
| *UTB* | 10.759*** | 10.726*** | 10.554*** | 18.801*** | 18.787*** | 18.772*** |
| | (4.16) | (4.15) | (4.11) | (8.02) | (8.02) | (8.01) |
| *GAAPETR* | -0.016 | -0.011 | -0.017 | 0.375*** | 0.376*** | 0.374*** |
| | (-0.07) | (-0.05) | (-0.07) | (4.51) | (4.53) | (4.52) |
| *FOREIGN* | 0.105 | 0.109 | 0.111 | 0.543*** | 0.543*** | 0.540*** |
| | (0.83) | (0.86) | (0.87) | (6.25) | (6.24) | (6.22) |
| *FLUIDITY* | 0.034* | 0.035* | 0.035* | -0.082*** | -0.082*** | -0.083*** |
| | (1.69) | (1.73) | (1.73) | (-5.41) | (-5.40) | (-5.47) |
| *Ln(SIZE)* | 0.133** | 0.133** | 0.129** | 0.568*** | 0.568*** | 0.567*** |
| | (2.04) | (2.03) | (1.98) | (12.77) | (12.76) | (12.77) |
| *MTB* | -0.008 | -0.009 | -0.008 | -0.037*** | -0.037*** | -0.037*** |
| | (-0.48) | (-0.50) | (-0.48) | (-3.18) | (-3.19) | (-3.23) |
| *LEV* | -0.695** | -0.689** | -0.667** | 0.214 | 0.217 | 0.182 |
| | (-2.14) | (-2.12) | (-2.03) | (1.01) | (1.02) | (0.86) |
| *INTANGIBLE* | 0.386 | 0.385 | 0.419 | -0.269 | -0.271 | -0.271 |
| | (1.43) | (1.42) | (1.55) | (-1.58) | (-1.58) | (-1.59) |
| *R&D* | 2.414** | 2.434** | 2.478** | -4.513*** | -4.509*** | -4.467*** |
| | (2.06) | (2.07) | (2.11) | (-4.81) | (-4.80) | (-4.77) |
| *CAPX* | -0.119 | -0.130 | -0.109 | -0.810 | -0.808 | -0.846 |
| | (-0.08) | (-0.09) | (-0.08) | (-0.74) | (-0.74) | (-0.77) |
| *PPE* | 0.104 | 0.112 | 0.123 | -0.492* | -0.491* | -0.483* |
| | (0.24) | (0.26) | (0.29) | (-1.79) | (-1.79) | (-1.75) |
| *ROA* | -1.622** | -1.613** | -1.569* | -1.908*** | -1.906*** | -1.872*** |
| | (-1.98) | (-1.97) | (-1.91) | (-3.54) | (-3.54) | (-3.47) |
| *RETURN* | -0.036 | -0.037 | -0.037 | -0.269*** | -0.270*** | -0.271*** |
| | (-0.28) | (-0.29) | (-0.29) | (-3.51) | (-3.51) | (-3.53) |
| *RETVOL* | -14.175** | -14.085** | -14.217** | -7.561* | -7.574* | -7.759* |
| | (-2.04) | (-2.03) | (-2.04) | (-1.66) | (-1.66) | (-1.70) |
| *Ln(ANALYST)* | 0.136 | 0.136 | 0.138 | 0.105 | 0.105 | 0.102 |
| | (1.36) | (1.36) | (1.39) | (1.58) | (1.58) | (1.54) |
| *INST* | -0.094 | -0.091 | -0.067 | 0.301*** | 0.303*** | 0.276*** |
| | (-0.60) | (-0.58) | (-0.43) | (2.78) | (2.79) | (2.58) |
| *CIC* | 0.138 | 0.141 | 0.136 | 0.128 | 0.129 | 0.127 |
| | (0.84) | (0.85) | (0.82) | (1.20) | (1.20) | (1.18) |
| *Ln(NUM_FILE)* | 0.248** | 0.252** | | -0.125* | -0.124* | |
| | (2.17) | (2.19) | | (-1.78) | (-1.76) | |

| | | | | | | |
|---|---|---|---|---|---|---|
| *Ln(NUM_CNT)* | | | 0.147** | | | -0.011 |
| | | | (1.97) | | | (-0.23) |
| Industry FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 12,852 | 12,852 | 12,852 | 12,852 | 12,852 | 12,852 |
| Pseudo R2 | 0.577 | 0.577 | 0.576 | 0.397 | 0.397 | 0.397 |

This table reports logit regression results testing for an association between material contract redactions and ex-post IRS enforcement. *AUDIT_REF* is an indicator variable equal to 1 if the firm refers to a tax audit in its 10-K filing, and 0 otherwise. *SETTLEMENT_D* is an indicator variable equal to 1 if the firm discloses a positive tax settlement related to unrecognized tax benefits, and 0 otherwise. Other variables are defined in Appendix C. *z*-statistics reported in parentheses are based on standard errors clustered by firm. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.