

The Relevance and Pricing of Non-income Tax Relief

Michael Drake
Brigham Young University
mikedrake@byu.edu

Ryan Hess
University of Texas at Austin
ryan.hess@mcombs.utexas.edu

Jaron Wilde
University of Iowa
jaron-wilde@uiowa.edu

Braden Williams
University of Texas at Austin
brady.williams@mcombs.utexas.edu

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Accounting standard setters are deliberating requirements for firms to disclose information on government assistance they receive, including non-income tax relief programs. We contribute evidence to these discussions by highlighting that non-income tax relief awards include economically important information about future firm performance and expected returns. We posit that relief deals provide a signal about local jurisdictions' (private) information about firms' future performance expectations. We find that firms with the most non-income tax relief have significantly higher future performance (e.g., sales and operating income as a percentage of lagged assets are 5.2 and 1.0 percent higher, respectively) than those with the least. However, market prices appear to significantly underweight the information in these awards. Specifically, the spread in future abnormal returns between the portfolio of firms with the most and least non-income tax relief is approximately 5.3 percent. Consistent with limited public access to information about non-income taxes, we find that increased voluntary financial statement disclosure about non-income taxes improves the pricing of non-income tax relief. Overall, our findings suggest that non-income tax relief awards reflect local jurisdictions' ability to uncover economically important information about future firm performance and expected returns.

Keywords: non-income taxes; non-income tax relief; government tax incentives.

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1. Introduction

State and local governments regularly use non-income tax relief, subsidy programs and other incentives to attract business investment. *The New York Times*, for example, estimates that aggregate state and local government awards exceed \$80 billion annually (Story, Fehr, and Watkins 2012). While the dollar amount of relief deals is striking, existing accounting standards do not require U.S. firms to disclose information about the relief deals they receive. In fact, the magnitude of the awards, coupled with the current lack of required disclosure, has stirred a debate among activist groups, investors, and standard setters, who question whether financial statement users would benefit from an increased information environment surrounding these programs. We contribute evidence to this debate by investigating whether government relief deals include decision-useful information about future firm performance and whether and how the market impounds that information into stock prices.

We posit that state and local government awards provide a signal about future firm performance. Like other parties, including investors, resource-constrained governments have incentives to identify and invest in firms with promising prospects—in this case, to award relief to firms that are likely to generate a larger economic benefit to their jurisdiction. To that end, the explicit goal of government relief programs is to attract firms with incentives that will more than offset foregone (tax) revenues by generating growth in local economic activity. Unlike investors, however, state and local governments may have the ability to uncover information about future firm prospects during private relief negotiations, where firms can convey information about firm growth prospects, investment projects, etc. If the government relief awards are indeed associated with private information about future firm performance, then firms receiving such deals should exhibit improved future firm performance on average, but the stock market should not

necessarily reflect that private information unless it is disseminated in other ways. Thus, we predict that information about relief deals contains *ex ante* decision-useful information about future firm performance and expected stock returns.

Relief deals provide a particularly interesting setting to examine the information inherent in government awards, given that governments are traditionally viewed as “uninvited” parties to corporate transactions (Scholes et al. 2015, pg. 2). That said, while non-income tax relief programs reduce tax costs directly and governments should have preference for successful firms, it is unclear whether such awards will be associated with firm performance. Indeed, the fact that a state or local government is offering such relief may signal that operating in that location imposes additional non-tax costs that drive down pre-relief profits. Alternatively, locations that offer attractive non-income tax relief programs may draw more competition, driving down implicit pre-relief profits (Wilson 1999).

Consistent with information about government relief potentially being useful for investors, the Financial Accounting Standard Board (FASB) is deliberating whether to require firms to disclose the government awards they receive (FASB 2016a). Not surprisingly, some financial statement users favor increased disclosure and argue that it will allow investors to better understand the benefits of these programs. They also argue that increased disclosure would help capital providers understand the impact of the programs on firm performance and value (FASB 2016b). Others, however, contend that information about government programs is immaterial and already publicly available and that mandates would be costly. These critics say additional disclosures would not provide decision-useful information (FASB 2016b).

We focus on one particular class of government awards, non-income tax relief.¹ This focus reflects the fact that unlike other forms of government relief (e.g., cash grants and loans), non-income tax relief affects pre-tax income, but is not disclosed in a manner that allows users of financial statements to easily observe its effects.² The economic significance of non-income tax relief can also be very large. Taxes levied on a base other than income constitute a significant portion (approximately two-thirds) of the total amount of tax collected by state and local governments (U.S. Census 2018). These taxes also constitute a significant portion of a firm's overall tax burden.³ For example, aggregate data suggests that corporate income taxes have represented as little as 27 percent of the taxes paid and collected by U.S. corporations (Christensen, Cline, and Neubig 2001). Across U.S. multinationals, non-income taxes (excluding payroll taxes) were roughly half the magnitude of income taxes (Robinson 2012) prior to the Tax Cut and Jobs Act of 2017 ("TCJA"). Since the TCJA reduced the highest federal statutory corporate income tax rate by 40 percent, the relative importance of non-income taxes will likely increase.

Despite their economic significance, very few accounting studies examine non-income taxes, prompting Dyreng and Maydew's (2018) recent call for such research. The effects of non-income taxes are not thoroughly understood in part because the information environment

¹ We define non-income tax relief as the reduction of a tax levied on a base other than income. Examples include taxes on property and sales as well as excises tax, etc. Non-income tax relief is a subset of broad spectrum of government programs that benefit firms (e.g., enacted tax deductions and tax credits, cash and lending incentive programs, negotiated tax relief and other benefits). Our focus on non-income tax relief responds to recent calls for research examining such benefits in particular (Dyreng and Maydew 2018) and FASB's ongoing deliberations about potential disclosure requirements regarding firms' government awards. Appendix A illustrates how non-income-tax relief fits into the larger picture of public policies designed to benefit firms.

² International Accounting Standards (IAS) 20—Accounting for Government Grants and Disclosure of Government Assistance outlines how to account for government assistance under International Financial Reporting Standards (IFRS). However, U.S. Generally Accepted Accounting Principles (GAAP) do not specify the accounting treatment firms should use to record direct government grants. Thus, it is unclear whether U.S. firms preparing financial statements apply IAS 20 in recording direct government grants or account for them in another way.

³ <https://files.taxfoundation.org/legacy/docs/ff354.pdf>

surrounding them is not well developed. Non-income taxes are outside the scope of the disclosure requirements pertaining to the tax footnote (ASC 740). Firms recognize non-income taxes (and the associated relief) across multiple income statement line items, making it difficult to assess their effects on reported income. Firms also operate in a variety of jurisdictions, with different types of non-income taxes assessed at different rates. Thus, there is no benchmark against which one could infer the amount of non-income taxes firms are avoiding. These constraints have impeded assessments by researchers and financial statement users.

Because of the lack of pertinent non-income tax information in firms' public filings, we use a large dataset of government awards assembled by Good Jobs First (GJF), a nonprofit activist group dedicated to tracking government subsidies (e.g., tax incentives) and promoting government transparency and accountability in economic development (Aobdia, Koester, Petacchi 2018; Raghunandan 2017).⁴ GJF obtains historical information about government awards provided to companies from official state, local, and federal online sources, via informal inquiries made to state and local agencies and formal freedom of information filings. While this information is public, it is unclear when investors impound the information into stock prices, as governments may not report information about such awards until months, if not years, after firms' financial statements are released. We aggregate the amount of non-income tax awards firms receive and use the initial award year as a proxy for when information about non-income-tax relief should have been relevant to investors (GJF 2018), if it were publicly available.⁵

Our first set of analyses examines the relation between the magnitude of non-income-tax relief and future firm performance. We identify three plausible channels by which government relief deals might predict future performance: (1) the direct financial benefit of the relief deal; (2)

⁴ The government assistance data is available here: <https://www.goodjobsfirst.org/>.

⁵ We discuss the timing of the year from GJF data in Section 3.

the associated increase in investment opportunities, access to the consumer market, and competitive advantage gained in the jurisdiction; and (3) governments preferring to award relief to firms with superior financial performance. If private information about a firm's future prospects is passed to jurisdictions during the negotiation and selection processing, the level of future performance could easily increase by more than would be mechanically explained by the non-income tax relief. Although lack of disclosure on non-income taxes precludes direct calculation of the full savings associated with these relief programs, we can estimate the statistical association between the relative magnitude of non-income-tax incentives awarded (in year t) and the future financial performance of the firm (in year $t+1$). This approach follows a long line of research that examines the systematic relationship between current-period information signals and future performance to assess the usefulness of the signal (e.g., Ou and Penman 1989; Abarbanell and Bushee 1997; Sloan 1996; Hanlon 2005; Hui, Nelson, and Yeung 2016).

We find that the level of non-income-tax relief is positively associated with future sales growth, sales, gross profit, operating income, and net income. On average, firms in the highest decile of non-income tax relief report sales growth that is 3.80 percent higher than that reported by firms in the lowest decile. This result is consistent with non-income tax relief likely reflecting local governments' ability to uncover information about future sales growth in addition to the direct (non-income tax) reductions in operating expenses. The spread between the highest and lowest decile of non-income tax relief firms is 12.60 percent of sales, 2.40 percent of gross profit, 1.30 percent of operating income, and 0.90 percent of net income (all scaled by lagged assets). When we include firm fixed effects in the model to mitigate concerns our findings are driven by omitted, time-invariant firm characteristics, we continue to find evidence of a positive

association between non-income tax relief and future performance measures. These findings indicate that current information about non-income tax relief is informative about future firm performance, beyond information contained in a broad set of other publicly disclosed performance metrics.

We then examine whether security prices reflect information about non-income tax relief and future firm performance. The market may fail to promptly incorporate the implications of non-income tax relief awards into securities prices—either because the information is not readily available or because it is not fully appreciated. While much information about firms’ non-income tax relief may become part of the public domain over time, the information may not be immediately available to investors because it is reported by multiple distinct state and local jurisdictions through different outlets and platforms at different times in the future. If the opacity surrounding this relief makes immediate price formation difficult, then we would expect to observe a positive association between the *current* level of non-income tax relief and *future* abnormal returns.

We test this conjecture using two methods. First, we examine the degree to which non-income tax relief explains the cross-section of future abnormal returns (adjusted for size, book-to-market, and momentum, following Daniel et al. 1997) and find evidence of a significantly positive association. Firms in the highest decile of non-income tax relief realize future abnormal returns that are 4.3 percent higher than those in the lowest decile. Second, we estimate factor-adjusted returns (i.e., market, SMB, HML, and UMD) to monthly portfolios formed based on the level of non-income tax relief. On average, firms in the highest portfolio of non-income tax relief outperform those in the lowest portfolio by 44 basis points per month or 5.3 percent annualized.

Our results suggest that, although non-income tax relief is economically meaningful, it is not immediately reflected in security prices.

Relative to the size of sample awards in GJF, this market response may initially seem large. However, two points help explain the magnitude. First, while the GJF data is the most complete source of government awards and programs of which we are aware, it is unlikely to capture the full scope of the financial impact of non-income tax relief on firms in the U.S. and does *not* reflect any non-income tax relief that comes from sources outside the U.S. Thus, we use the data as a proxy for firms' relative non-income tax relief that should correlate with, but does not capture the full magnitude of, firms' total latent non-income tax relief reflected in future earnings and returns tests. Second, and more importantly, non-income tax relief may be a signal that reflects private information conveyed to jurisdictions about the future prospects of a firm. If so, then non-income tax relief provides a useful signal about future performance and abnormal returns.

We next explore why non-income tax relief is underweighted by the market. When research has examined the relation between a financial signal (e.g., sales growth, earnings, accruals, etc.) and future returns, it has generally focused on signals that are clearly public, thanks to mandated disclosures. Thus, when a signal is associated with future abnormal returns, the typical inference is that the market has difficulty impounding it into price in a timely manner. Our setting is more nuanced because it is not clear that the information is readily available to market participants. Instead, the information is disaggregated across various state and municipality public disclosures that may only be available on a delayed basis or only accessible via direct request. Thus the availability and ease of accessing the information is in question.

We perform two tests to explore whether the underweighting of non-income tax relief awards is due to an inadequately developed information environment. First, we compare how

equity prices weight information about the level of *non-income* tax relief, compared to the level of *income*-tax avoidance. While both income and non-income tax decisions are likely to fall under a common manager within each firm (e.g., CFO or tax director), information on income tax avoidance is publicly available via the extensive firm disclosures required by ASC 740. We find no evidence that the market misconstrues information about income-tax avoidance. This result is consistent with stock prices reflecting tax-related information when that information is transparently disclosed. By comparing attributes of the same firm, our evidence further suggests, albeit indirectly, that a lack of disclosure may contribute to our finding that stock prices do not fully reflect the information in non-income tax relief.

Our second test more directly captures whether the underweighting of non-income tax relief is moderated by public disclosure. We count the number of references in firms' 10-Ks to taxes other than income taxes. We find, for every 28 references to income taxes, there is only one reference to a non-income tax item. Consistent with the opacity of information about non-income taxes inhibiting investor understanding, we find some evidence that voluntary disclosure of non-income taxes reduces some of the difficulty in pricing non-income tax relief.

Finally, we consider the possibility that the association between non-income tax relief and future abnormal returns is driven by omitted risk factor related to the relief. To explore this possibility, we follow Sloan (1996) and examine whether the future abnormal returns associated with non-income tax relief are concentrated around future earnings announcements. If the abnormal returns associated with the level of non-income tax relief represent a delayed response to predictable performance changes, and not to an omitted risk factor, then they should cluster around future information events that reveal these performance changes. Consistent with this explanation, we find that nearly one-half (47.6 percent) of the future abnormal returns associated

with non-income tax relief cluster around future earnings announcements, even though the earnings announcement period represents less than 4 percent of the total trading days. The proportion of returns observed around earnings announcements (47.6 percent) resembles the proportion associated with the accrual anomaly (40.0 percent) observed by Sloan (1996). While this evidence does not rule out a risk-based explanation, it does suggest that much of the information in non-income taxes about future performance is not being priced until the market is surprised by the earnings changes in the future.

This study makes several contributions to the accounting literature. First, this study responds to the recent call for research on non-income taxes (Dyreg and Maydew 2018). Research on corporate income tax avoidance has significantly improved understanding of the determinants and consequences of income tax planning (see Hanlon and Heitzman 2010 and Wilde and Wilson 2018 for reviews). However, this literature does not offer insights on firms' non-income tax minimization strategies or the market's pricing of those strategies. Robinson (2012) provides descriptive evidence on the magnitude of firms' non-income tax burdens and documents a positive association between firms' income tax and non-income tax burdens, suggesting various types of tax planning are complementary. Our study highlights the market implications of heterogeneous information availability and disclosure requirements around different types of taxes.

Second, this study provides financial accounting standard setters with empirical evidence on the relevance of a *proposed* standard (i.e., FASB Topic 832 Disclosures by Business Entities about Government Assistance). Many studies examine the relevance of information required by a standard that has already been implemented. These studies rarely—if ever—trigger revisions of enacted standards. In contrast, we use a dataset constructed from nontraditional data sources and

retroactively infer whether this information would have been relevant to investors had it been disclosed in a timely manner. This approach provides standard setters with *ex ante* evidence about the relevance of disclosures that are currently being considered. This evidence should not, however, be interpreted that investors would be better off with the proposed disclosure. It also should not imply that FASB should require such disclosure. Our findings speak to the relevance and decision-usefulness of the information, which is only one, albeit important, input into FASB's ultimate decision making process.

2. Background and Motivation

Despite the economic significance of non-income taxes, their dollar magnitude is difficult to estimate. Two recent studies use proprietary Bureau of Economic Analysis (BEA) survey data to focus on “other taxes” and illuminate their materiality and magnitude.⁶ Desai, Foley, and Hines (2004) report that U.S. multinational affiliates pay more non-income tax than income tax in nine of 12 industries studied. Robinson (2012) uses BEA data to calculate “income before all tax” for U.S. multinationals, which she uses as a common denominator to calculate effective income tax rates with effective other tax rates. From 1982–2004, the average effective income tax rate was 25 percent for her sample firms. The effective other tax rate (excluding payroll taxes) was 13 percent. Together, these studies suggest that the magnitude of non-income taxes paid is material for virtually all firms and can be very large for some firms but that there is

⁶ As described in the data appendix of Robinson (2012), the BEA's definition of other taxes includes “taxes (other than income and payroll taxes and nontax payments (other than production royalty payments.” These include “(a) sales, consumption, and excise taxes collected by the affiliate on goods and services the affiliate sold; (b) property and other taxes on the value of assets and capital; (c) any remaining taxes (other than income and payroll taxes); and (d) import and export duties, license fees, fines, penalties, and all other payments or accruals of nontax liabilities (other than production royalty payments for natural resources).”

variation across firms and industries. Understanding the magnitude and importance is impeded by the opaque nature of these other taxes (Christensen, Cline, and Neubig 2001).

Non-income taxes are “hidden” because they are recorded in many different places on the financial statements. Under Rule 5-03(b)(11) of Regulation S-X, public companies are only required to report a separate line item for income tax expense, but no rule requires separate disclosure for non-income tax. For example, sales taxes paid for the purchase of production equipment are capitalized and then depreciated and included in cost of goods sold (COGS). The employer portion of payroll taxes for nonproduction employees is included in selling, general, and administrative expenses (SGA). Property taxes paid on investment properties are considered non-operating expenses. These examples illustrate only a few tax types and their potential accounting treatment. Appendix B contains a more comprehensive list of non-income taxes and where they are recognized on the financial statements.

Certain constituencies are interested in increased disclosure of special tax deals by both municipalities and corporations. Citizen groups and government watchdogs both pushed for additional disclosure by governments at all levels. For municipalities, tax expenditures are not technically an “expense” account for financial reporting purposes, so they are not listed on a municipality’s financial statements. Historically, most states and cities did not disclose the tax incentives offered to firms. However, in 2015, the Governmental Accounting Standards Board (GASB) released GASB 77 “Tax Abatement Disclosures,” which creates reporting requirements for tax incentives granted by a local government for fiscal years ending after Dec. 15, 2015. Under the new standard, governments must disclose descriptive information about abatement agreements, including the dollar amount of abated taxes and other commitments.⁷ That said, the

⁷ Other commitments refers to two items: (1) commitments made by the corporation, such as number of employees they will hire, and (2) commitments made by the government, such as infrastructure development.

standard only requires an aggregate disclosure and does not require disclosure of incentives on a per-company basis. The new standard provides little information for investors but allows governments to incentivize corporations to bring jobs and other benefits to communities with less fear of political or social consequences. Therefore, we are able to infer expectations about future earnings based on the behavior of the awarding government.

The FASB is currently discussing a standard to increase corporate disclosure of government assistance (FASB 2016a). The required disclosure would include (1) information about government assistance, its nature, and accounting policies and methods used to account for it; (2) disclosure of which financial statement line items are influenced by government assistance and by what amount; (3) terms and conditions of assistance agreements (e.g., contingencies); and (4) “unless impracticable, the amount of government assistance received but not recognized directly in the financial statements” (FASB 2016a).

Comment letters and public feedback on the proposed standard highlight several potential costs and benefits of the potential disclosure requirements. For instance, the FASB comment-letter summary notes that most accounting analysts expect a disclosure of quantitative value would be “decision-useful,” as it could inform financial statement users about potential effects on firms’ financial results. These analysts also observe that firms and their preparers typically have more information than investors, whose estimates can vary significantly, and thus it may be more appropriate for firms to provide such estimates. Similarly, financial statement users generally believe “the information required by the proposed amendment would improve transparency about government assistance agreements and are primarily interested in understanding the terms and conditions of the agreement, contingencies, and longevity” (FASB 2016b).

However, different commenters had opposing views, expressing concern that the cost to provide the disclosure would outweigh the benefits (FASB 2016b). Some financial statements users commented that the value of government assistance is not substantial enough to affect their analyses of companies. Most buy-side analysts do “not believe that a quantitative value would provide a user with a significant amount of decision-useful information, and they were concerned that cost to provide and audit the quantitative value of such information would outweigh the benefit to them” (FASB 2016b). Given the number of different types of non-income taxes and the number of local jurisdictions involved, the cost of preparing and auditing the disclosures would not be trivial.

Other stakeholders expressed competitive concerns about requiring disclosure about government assistance as part of GAAP. Governments at every level use tax incentives to attract investment and bolster local economies (Eisinger 1988). Firms and governments often prefer that these negotiations be kept confidential or out of the public eye.⁸ Some opponents of the disclosure requirement suggest that “governments may be reluctant to entertain negotiations with companies subject to disclosure requirements and may reconsider assistance” (FASB 2016b). At the extreme, this concern suggests that foreign companies not subject to GAAP may gain a competitive advantage over U.S. companies required to use GAAP: local jurisdictions might prefer to attract business from sources that are not required to disclose the details of agreements.

Our study seeks to inform, but does not seek to resolve, the overall debate about the costs and benefits of requiring disclosure of government assistance. Rather, we examine one potential

⁸ See, for example, the opposition to GASB 77 (Rosenbaum 2018) or Amazon’s confidentiality request for cities putting together second-round inducement proposals to host Amazon’s second headquarters. <https://www.cnn.com/2018/01/25/amazon-insists-on-new-factor-for-cities-still-in-hq2-race-secrecy.html>

benefit to one important stakeholder (i.e., price efficiency for investors). We leave to standard setters consideration of its merits relative to other objectives.

3. Data Source – Good Jobs First

Our data comes from a novel dataset of state and local government incentive awards provided to corporations. Corporations receive these awards under the assumption that their operations and investments will bolster the local economy and provide a net economic benefit. To promote corporate and government accountability, GJF, a national policy resource center, identifies and collects information related to federal, state, and local non-income tax incentives. GJF collects incentive award data from official federal, state, and local government online sources and, in some cases, gathers data through informal requests or formal freedom of information filings. To our knowledge, the GJF database is the most complete and comprehensive collection of government incentives provided to corporations. We are not the first academic researchers to use GJF data. Aobdia, Koester, and Petacchi (2018) use the data to examine the determinants of government awards and whether the awards are affected by political connections. Raghunandan (2017) investigates whether firms that receive government awards are more likely to commit financial fraud. However, to our knowledge, we are the first to study the relevance of non-income tax relief and the adequacy of the information environment for market participants.

The GJF database contains 578,000 individual subsidy awards from 1,031 government subsidies. It covers incentives in all 50 states and the District of Columbia. GJF partitions the data into two main datasets, a subsidiary file and a parent file. The subsidiary file contains the recipient's name as well as the amount, location, and type of subsidy received. Subsidy types

include enterprise zone credits, property tax abatements, tax increment financing, and tax credits/rebates. Given our paper’s focus, we include only non-income tax incentives in our sample.⁹ Appendix C has a complete list of the GJF categories of subsidies we consider to be non-income taxes and the reasons why other categories are not included in our sample. The parent file contains the parent name, the GJF parent ID, and the stock ticker of public companies. We link the subsidiary and parent data files using the GJF parent ID. We then merge this data with Compustat and CRSP by stock ticker to obtain data on firm fundamentals and securities prices. GJF indicates the data becomes more complete after 2002 (Raghunandan 2017); accordingly, our sample period covers the years 2003–2016.

GJF’s data is subject to certain limitations. First, although the dataset is the most complete source of government awards and programs of which we are aware, it is by no means comprehensive. Thus we use the data as a proxy for firms’ non-income tax relief that should correlate with, but is likely a subset of, firms’ full non-income tax relief. Hence, we are not able to provide precise magnitude estimates with these data. Second, although some information about the awards is available, jurisdictions do not disclose it in a standard way (e.g., some multiyear deals are reported over multiple years, and others are reported all in the initial announcement year). Third, the subsidy amounts recorded in the GJF database may represent single-year or multi-year deals. Government programs often award multi-year deals to corporations, though generally no more than 10 years; because there is no uniform reporting

⁹ We exclude income tax incentives because they are already disclosed in the tax footnote and there is a more robust information environment around these programs. We exclude direct cash grants and loans because we are unable to tell how they are accounted for and whether they will directly impact firms’ earnings. Finally, we exclude GJF’s “megadeals” because (1) they are reported in multiple places throughout financial statements and (2) they are selected by GJF for additional scrutiny and information gathering. In contrast, the observations in our sample come from broad information requests addressed to state and local governments. Appendix C provides more detail on our sample construction.

requirement, states and municipalities vary on whether they report per-year or total figures. GJF collects the amounts as reported but does not standardize them.

We use these data to construct a measure of non-income tax relief that is more conceptually direct than proxies used in the income tax avoidance literature. A traditional measure of tax avoidance, such as GAAP (cash) effective tax rate (“ETR”), measures the level of tax expense (tax paid), relative to pre-tax book income. The literature often assumes that actions that reflect tax avoidance (e.g., reduce ETR) reflect some form of tax planning.¹⁰ That said, researchers also highlight that some firm actions, such as investing in municipal bonds or operating in low income-tax jurisdictions, may stem from non-tax firm objectives that happen to also reduce a firm’s tax burden. In contrast, our measure directly captures non-income tax relief, and it is unlikely that corporations seek non-income tax awards from municipalities for purposes other than reducing taxes.

4. Research Design

4.1 Non-income tax relief and future performance

We first examine how non-income tax relief relates to future firm performance. We estimate the impact of non-income tax relief on future firm performance using the following OLS regression:

$$FIRM\ PERFORMANCE_{t+1} = \alpha_0 + \alpha_1 NON-INCOME\ TAXES\ RELIEF + \alpha CONTROLS + \varepsilon, \quad (1)$$

where the outcome variable is one of five measures of future firm performance—the percentage change in sales over the prior period (*SALES GROWTH*), total sales scaled by lagged total assets (*SALES*), gross profit scaled by lagged total assets (*GP*), operating income scaled by lagged total

¹⁰ Hanlon and Heitzman (2010, p. 137) “define tax avoidance broadly as the reduction of explicit taxes.”

assets (*OPER INC*), and net income scaled by lagged total assets (*NET INC*).¹¹ Our variable of interest, *NON-INCOME TAX RELIEF*, is measured as the decile rank of the total amount of non-income tax abatements awarded in a particular year scaled by lagged total assets.¹² We scale the decile rank to range between 0 and 1 to facilitate the interpretation of the coefficient magnitudes. A positive and significant coefficient on *NON-INCOME TAX RELIEF* suggests that information on the award non-income tax relief helps predict future performance; the magnitude of the coefficient illuminates the economic significance of the relation.

Model (1) also includes a broad vector of control variables (*CONTROLS*). We arrange the control variables into four groups of firm and market characteristics shown in the literature to affect firm performance: *growth expectations, firm characteristics, market characteristics, and analyst attention / visibility*. We include long-term growth forecasts (*LTG FORECASTS*), the book-to-market ratio (*BTM*), the growth of firm sales (*SALES GROWTH*), and firm capital expenditures (*LN(CAPEX)*) to control for variation in growth expectations, as firms with greater growth expectations may be associated with both firm performance and activities that give rise to opportunities to negotiate non-income based tax relief (e.g., investments). We include a series of firm-level control variables to control for general firm characteristics. We include current pre-tax income scaled by sales (*PRE-TAX INC%*) to control for current pre-tax profitability.¹³ We control for firm size (*LN(MVE)*) using the natural log of market value of equity because larger firms may be better able to negotiate for non-income tax relief and firm size is a known predictor of future performance (Banz 1981; Collins et al. 1987). We measure *LEVERAGE* as total short-

¹¹ We define all variables in Appendix D.

¹² Our use of deciles follows research that examines the association between a particular fundamental signal in year t and future performance in year t+1 (e.g., Abarbanell and Bushee 1998; Mashruwala et al. 2006). Consistent with this literature, the ranked positions are rebalanced each year.

¹³ We use pre-tax income because the tax relief programs included in our sample should be reflected in the income statement above the pre-tax income line. Thus, including pre-tax income in the model allows us to assess whether non-income tax relief has information content beyond that of the aggregate profitability measure it impacts.

term and long-term debt over total assets and include it because firms with lower leverage tend to have greater investment opportunities (Lang et al. 1996). We include net operating assets (*NET OPERATING ASSETS*) to control for the current level of investment in the firm and because prior research finds that it predicts future performance (Hirshleifer et al. 2004). We include firm age (*AGE*) because more mature, established firms may be better able to negotiate for non-income tax relief and older firms are generally more profitable in the future (Zhang 2006). Following Hui et al. (2016), we provide additional controls for market characteristics by including a measure of measure of arbitrage risk (*ARBITRAGE*) and stock price volatility (*BETA*). We also control for current year, risk-adjusted returns (*DGTW RET*). *DGTW RET* is the Daniel, Grinblatt, Titman, and Wermers (1997) (“DGTW”) quintile portfolio-adjusted (size \times book-to-market \times momentum) return.¹⁵ We also control for the strength of the information environment of the firm by including proxies for sell-side and buy-side analyst attention. Specifically, we include the number of analysts following a firm (*ANALYST*) and the percentage of equity owned by institutional investors (*INSTITUTIONAL OWNERSHIP*). We include these controls because the implications of non-income tax relief for future firm performance better communicated and understood by the market when more analysts are following the activities of the firm. Finally, we include industry fixed effects (Fama-French 48 classification) to control for time-invariant firm attributes. We also include year fixed effects to control for cross-sectional time effects. Together, these variables should control for the sum total of publicly available information about a firm’s future prospects.

¹⁵ *DGTW RET* captures abnormal stock return by adjusting returns within 125 passive portfolios. The portfolios are constructed by grouping firms annually into quintiles on three characteristic-based risk factors: market capitalization, book-to-market, and prior-year return. The $5 \times 5 \times 5$ grouping of firms creates a collection of 125 passive portfolios.

In Table 1, we provide descriptive statistics for firms in our sample. The mean raw value of non-income tax relief in our sample is \$2.8 million. Recall this is a lower bound estimate because the Good Jobs First sample may not include all of a firm's non-income tax relief in the U.S. and none of the relief outside the U.S. Notably, our sample is primarily comprised of large, mature companies. The average (median) firm in our sample has a market capitalization of \$17.6 (\$4.2) billion, is 34 (29) years old, and is followed by 12 (11) analysts. In addition, we find that the average firm is growing at approximately 9 percent and is profitable. Thus our results may not generalize to smaller companies. That said, as larger firms generally have more developed information environments, which make it is easier for investors to price information signals, any evidence of difficulty in pricing non-income tax relief in our sample of large, mature firms may be understated, compared with the full market, as incorporating information about non-income tax relief may be even more difficult for smaller firms.

In Table 2, we present the correlation table of the variables used in our main analyses. We find that *NON-INCOME TAX RELIEF* is positively correlated with all five measures of future performance (*SALES GROWTH*, *SALES*, *GP*, *OPER INC*, and *NET INC*), providing preliminary evidence consistent with non-income tax relief being associated with future firm performance.

Table 3, Panel A, presents the results of estimating Model (1). We report the results using future *SALES GROWTH*, *SALES*, *GP*, *OPER INC*, and *NET INC* as alternative dependent variables in columns (1), (2), (3), (4), and (5), respectively. In columns (1) and (2), we find that *NON-INCOME TAX RELIEF* is positively associated with both future *SALES GROWTH* (0.038;

p -value < 0.01) and future *SALES* (0.126; p -value < 0.01).¹⁷ If non-income tax relief awards merely offset expenses, then we would not expect them to be positively associated with future sales. However, if jurisdictions give non-income tax relief awards to firms that they know are going to do well in the future, then this signally story would predict that *NON-INCOME TAX RELIEF* has a positive partial correlation with future sales outcomes. In column (3), we find evidence that *NON-INCOME TAX RELIEF* is positively associated with future *GP* (0.024; p -value < 0.01). In column (4), we find evidence of a significantly positive association between non-income tax relief and future *OPER INC* (0.013; p -value < 0.01). Recall that the *NON-INCOME TAX RELIEF* measure is a decile rank, scaled to range between 0 and 1. Thus the magnitude of the coefficient indicates that firms in the highest decile of *NON-INCOME TAX RELIEF* realize an operating income return on assets that is 1.3 percent higher than firms in the lowest decile. In column (5) of Table 3, we find a significant positive association between *NON-INCOME TAX RELIEF* and future *NET INC* (0.009; p -value < 0.01). This result suggests that firms receiving a non-income tax benefit can generate a higher return on their assets. Firms in the highest decile of *NON-INCOME TAX RELIEF* report values of future *NET INC* that is 90 basis points higher than values reported by firms in the lowest decile. Together, the evidence in Table 3, Panel A, suggests that the firms that receive the most non-income tax relief experience higher operating performance on the magnitude of roughly 1 percent of total assets.

Next we examine the robustness of the model (1) estimation results to the inclusion of firm fixed effects in model. Certain firms may be better able to secure government assistance for a variety of reasons that are difficult to capture empirically. By including firm fixed effects in the

¹⁷ In untabulated analysis, we use the natural log of future sales as an alternative measure of sales and do not find evidence of a significant association with the level of future sales, suggesting that non-income tax relief is associated with growth in sales, rather than merely a size effect (i.e., level of sales).

model, we control for these characteristics to the extent that they are reasonably stationary. Firm fixed effects also change the focus of the empirical test to exploit *within-firm* variation and thus provide a more rigorous test of the relation. We present the results that include firm fixed effects in Panel B of Table 3. Here, we again find that both measures of sales are positively associated with non-income tax relief but the magnitude of *SALES* is roughly half as large at 0.052. This result suggests that a government award both provides a signal about firms that are likely to have higher sales and that the award itself provides firms the investment opportunity through which it can increase sales. We also find *GP* and *OPER INC* remain positively associated with non-income tax relief. We do not find a significant association with *NET INC* in this specification. The magnitudes decrease slightly from those reported in Panel A but results are still economically significant. For instance, we find that, when a firm is in the highest decile of *NON-INCOME TAX RELIEF*, it realizes an operating income return on assets that is 1.0 percent of lagged assets higher than when that firm is in the lowest decile, all else equal. These results provide additional support for the idea that the level non-income tax relief provides information about future performance.

4.2 Market pricing of non-income tax relief

We next test, in two ways, whether *NON-INCOME TAX RELIEF* is associated with future stock returns. First, we follow the literature (e.g., Abarbanell and Bushee 1998; Mashruwala et al. 2006) and use a cross-sectional regression approach to investigate the association between the decile rank of non-income tax relief and future risk-adjusted stock returns. Specifically, we estimate the following OLS regression model:

$$DGTW\ RET_{t+1} = \omega_0 + \omega_1 NON-INCOME\ TAXES\ RELIEF + \omega CONTROLS + \varepsilon. \quad (2)$$

In Model (2), we include all control variables from Model (1). We also add industry and year fixed effects. A significant coefficient on *NON-INCOME TAX RELIEF* in Model (2) suggests that variation in non-income based tax relief awards include information that has not been immediately impounded into price.

In Table 4, we presents the results of estimating Model (2). We find evidence of a significantly positive association between *NON-INCOME TAX RELIEF* and future abnormal returns, suggesting the market underweights the information in non-income tax relief. The coefficient on *NON-INCOME TAX RELIEF* is 0.043 (p -value < 0.05) and indicates that, on average, firms in the highest decile of *NON-INCOME TAX RELIEF* earn an annual, risk-adjusted stock return that is 4.3 percent higher than those in the lowest decile. While the magnitude of this return is not trivial, this does not represent an implementable trading return because the ranked portfolio positions are not aligned in calendar time.

Next, we estimate abnormal returns using portfolios that are aligned in calendar-time. We do this by constraining our sample to include only firms with December fiscal year-ends and constructing the portfolios in May of each year. Again, our portfolios are based on deciles of *NON-INCOME TAX RELIEF*. We then calculate abnormal returns to each portfolio by estimating the following four-factor model separately for each portfolio using its time-series of monthly returns:

$$RET_P - RET_{RF} = \mu_0 + \mu_1(RET_{MKT} - RET_{RF}) + \mu_2SMB + \mu_3HML + \mu_4UMD + \varepsilon, \quad (3)$$

where RET_P is the raw monthly portfolio return; RET_{RF} is the risk-free rate; RET_{MKT} is the value-weighted market return; and SMB , HML , and UMD are the Fama-French-Carhart risk factors associated with size, value, and momentum, respectively. The intercept μ_0 is the estimate of the average monthly abnormal return to a particular portfolio. We then compare the abnormal

return estimates to the portfolios with the highest (decile 10) and lowest (decile 1) level of *NON-INCOME TAX RELIEF*.

In Table 5, we present the four-factor model (Model 3) estimation results for each of the 10 portfolios. The intercepts in Model (4) reflect the monthly abnormal returns to any particular portfolio. The average monthly abnormal return for firms in the highest decile of *NON-INCOME TAX RELIEF* is 65 basis points, which is 7.8 percent annualized. The average monthly abnormal return for firms in the lowest decile of *NON-INCOME TAX RELIEFD* is 22 basis points or 2.6 percent annualized. The spread in the returns between the two extreme portfolios rounds to 44 basis points (5.2 percent annualized) and is both economically meaningful and statistically significant (p -value < 0.10).

Taken together, evidence from the cross-sectional test of future risk-adjusted returns and the portfolio analysis both suggest that information in the level of non-income tax relief about future performance is not fully reflected (i.e., the information is underweighted) in current period security prices.

5. Additional Analysis

In this section, we consider several explanations why stock prices may not fully reflect the information in non-income tax relief about future performance. One potential explanation is that the information is available to investors but they do not fully appreciate its implications. Another is that the information environment is insufficient for them to trade on the information. We examine these possibilities below.

5.1 Does the lack of disclosure on non-income tax relief play a role in its pricing?

5.1.1. Income tax avoidance and non-income tax relief

To further investigate whether the market pricing patterns we observe are related to non-income tax relief specifically, we also examine an alternative tax variable, *income tax avoidance*, which has a rich information environment to assess whether prices fail to fully reflect tax information when disclosure quality is relatively high and standardized across firms. Each quarter, firms update their best estimate of their annual effective tax rate (ETR) and report the estimate in their quarterly filings (Dhaliwal, Gleason, and Mills 2004). Each year, firms disclose additional details about deferred tax assets, deferred tax liabilities, unrecognized tax benefits, foreign taxes paid, state taxes paid, etc., in their tax footnote (Donohoe, McGill, and Outslay 2012). As this detailed information is readily accessible to the public (e.g., SEC filings), analysts who have questions about income tax issues can raise them during conference calls and elsewhere (Ehinger, Lee, Stomberg, and Towery 2017). Moreover, managers can provide ETR guidance and forecast tax expense (Koutney 2018).

We measure the amount of income tax avoided as the difference between what tax expense would be at the statutory rate (pre-tax income \times 35 percent) and the actual reported tax expense, deflated by lagged total assets. We label this variable *INCOME TAX AVOIDANCE*.¹⁸ For our sample, *INCOME TAX AVOIDANCE* averages 0.16 percent (untabulated). We rank *INCOME TAX AVOIDANCE* into deciles, by year, and scale the decile rank to range between 0 and 1. We then include *INCOME TAX AVOIDANCE* in Models (1) and (3) as an additional variable of interest. Here, the coefficient on *INCOME TAX AVOIDANCE* in Models (1) and (3)

¹⁸ This measure is distinct from that studied in prior research that examines the market pricing of book-tax differences (e.g., Lev and Nissim 2004; Hanlon 2005; Ayers, Jiang, and LaPlante 2009; Blaylock, Shevlin, and Wilson 2012). These studies generally find that temporary book-tax differences are mispriced in some settings.

should reflect whether *INCOME TAX AVOIDANCE* is associated with future accounting performance and future risk-adjusted returns. If *INCOME TAX AVOIDANCE* is positively associated with future accounting performance in Model (1) but is not associated with future risk-adjusted returns in Model (2), then this would provide some evidence that prices accurately reflect tax information when that information is disclosed transparently.

We present the results of our analysis in Table 6. Specifically, we report the results of tests corresponding to Model (1) after including *INCOME TAX AVOIDANCE* in columns (1) through (5) and the results for Model (2), including *INCOME TAX AVOIDANCE*, in column (6). We continue to find that *NON-INCOME TAX RELIEF* is positively associated with all six measures of future performance (*SALES GROWTH*, *SALES*, *GP*, *OPER INC*, *NET INC*, and *DGTW RET*) at the $p < 0.05$ level. In contrast, we find *INCOME TAX AVOIDANCE* is positively and significantly associated with future *NET INC* only and is not significantly associated with future *DGTW RET*.¹⁹ This evidence is consistent with the investors behaving as though they understand the effects of tax avoidance on future performance but are unable to sufficiently price the information in non-income tax relief. Because we compare the two practices within the same firms, we argue that a plausible explanation for this asymmetry relates to the stark differences in the information environments surrounding income taxes and non-income taxes.

5.1.2. Cross-sectional analysis based on disclosure of non-income taxes

The regression specifications we estimate in our primary tests capture a robust set of control variables associated with a firm's information environment generally (i.e., firm size, age, analyst following, institutional ownership, book-to-market ratio, and current-period returns).

¹⁹ This evidence is consistent with that of Thomas and Zhang (2014), who also find no evidence of a positive association between tax expense and future returns using annual data after controlling for expectations of future profitability.

However, they do not account for voluntary disclosure choices firms make in discussing specific non-income tax topics in their financial reports. We next examine whether voluntary disclosure about non-income taxes moderates the market pricing of these awards.

We begin by searching all 10-K filings for the firms in our sample for evidence of voluntary discussion about non-income based taxes. Here, we use the following set of search terms for non-income tax disclosure: “employment tax,” “excise tax,” “FICA,” “franchise tax,” “gross receipts tax,” “other tax,” “payroll tax,” “property tax,” “sales tax,” “unemployment tax,” and “use tax.” We then subtract the non-income disclosure count from the total number of times “tax” is disclosed to provide an income tax disclosure count. We believe this provides a reasonable estimate, as the vast majority of instances in which a firm references “tax” in its financials it is referring to income tax.

Consistent with income taxes having a significantly richer information environment, we find the mean (median) number of references to non-income-based taxes is 5.8 (2), whereas the mean (median) number of references to taxes generally is 164.2 (159). Thus firms’ 10-Ks reference income taxes some 28 times more frequently than other non-income taxes. To examine whether market pricing of non-income tax relief varies with firms’ discussion of these taxes in the 10-K, we partition the sample based on relatively greater (lower) frequency of non-income tax references and re-estimate our future returns tests (model 2).

Table 7 reports the results. In columns (1) and (2), we present the model results for the firm-years above and below median 10-K references to non-income tax terms, respectively. Comparison across the results for columns (1) and (2) indicates that, although the magnitude of the coefficient in the below-median subsample is lower than that for the above-median subsample (0.043 in column 2 versus 0.051 in column 1), there is little market pricing difference

between the two subgroups. In columns (3) and (4), we increase the difference in disclosure across the two subsamples by focusing on the extreme top and bottom 20 percent (rather than the top and bottom 50 percent). This reduces the number of observations used in the test but creates a stronger setting in which to isolate disclosure effects between the two subgroups. The results of these tests reveal that the coefficient in the subsample of firm-years with the fewest references to non-income taxes (0.063 in column 4) is significant ($p < 0.10$) and almost double the size of the coefficient for the firm-years with the most references to non-income based taxes (0.038 in column 3), which is insignificant. These latter results suggest that a lack of disclosure may contribute to the market's difficulty in promptly incorporating information about non-income taxes.

5.2 Risk explanation

Another explanation for our results is that the level of non-income tax relief captures some risk factor that is driving the association we observe between non-income tax relief and future returns. Following Sloan (1996), we examine this possibility by testing whether future abnormal returns related to non-income tax relief are concentrated around future quarterly earnings announcements. If the abnormal returns represent a delayed response to predictable performance changes, rather than to an unknown risk factor, they should cluster around future information events that reveal these performance changes.

We construct a two-day earnings announcement window (days 0 and +1) that captures abnormal returns to the quarterly earnings announcement. We require firms to have all eight days of subsequent returns data to be included in our sample, which decreases our sample to 4,348 firm-year observations. We report our results in Table 8.

We find that *NON-INCOME TAX RELIEF* is positively associated with abnormal returns realized in the two-day window around quarterly earnings releases (p -value < 0.01). This result is consistent with investors adjusting for performance changes around non-income tax relief, rather than reflecting an unknown risk factor. The coefficient on *NON-INCOME TAX RELIEF* is 0.020, which is almost one-half (46.5 percent) the magnitude of that estimated using annual risk-adjusted returns of 0.043 (see Table 4). We further note that the proportion of returns observed around earnings announcements associated with non-income tax relief is similar to the proportion associated with the accrual anomaly (40.0 percent) observed by Sloan (1996). While this evidence does not rule out a risk-based explanation of results, it does provide additional evidence that some of the information in non-income taxes about future performance is not being promptly priced by the market.

6. Conclusion

We study the effects of non-income tax relief on firm performance and future abnormal stock returns using a novel historical database of state and local tax awards given by governments. We find that non-income tax relief awards are associated with future firm performance but that market prices do not fully reflect this information. Firms in the top decile of non-income tax relief have about 4.3 percent higher future abnormal returns than those in the lowest decile. We do not find corresponding evidence indicating the market has difficulty pricing income tax avoidance, which suggests stock prices reflect income tax information that is disclosed in a timely manner. We find that voluntary disclosure of non-income taxes reduces some of the difficulty in pricing non-income tax relief. Finally, we conduct tests to show that nearly one half of the abnormal earnings from non-income tax relief are clustered around

earnings announcement windows. This result confirms that at least part of the observed abnormal returns is not due to unknown risk factors, but stems from inadequate and non-timely disclosure or the passage of private information to jurisdictions in negotiating for non-income tax relief deals.

To our knowledge, we are the first researchers to document the effects of non-income tax relief awards on future firm performance and stock returns. Our study is a first step at answering the call by Dyreng and Maydew (2018) to better understand the effect of non-income tax relief. We show that a government award of non-income tax relief offers *ex ante* predictive power for firm's future performance and expected returns, suggesting that non-income tax relief awards reflect state and local governments' ability to uncover information about future performance. Our results indicate that disclosure of non-income tax relief awards would provide investors with value-relevant information and, as such, are relevant to the FASB's current deliberations on the matter.

While our results highlight one potential benefit of proposed disclosure standards – providing decision-useful information to investors – they do not speak to potential costs of this disclosure. For example, we cannot estimate the compliance costs of providing the disclosures or answer concerns that the disclosures could impose proprietary costs or “affect government spending or jeopardize ongoing or future negotiations with the government and result in a competitive disadvantage” (FASB 2016b). We look forward to future research in this area that explores more of these potential costs and benefits.

Appendix A: Terminology (Not drawn to scale)

Figure 1 provides a representation of different tax benefits. Definitions are included below. The figure does not list all tax benefits nor does it represent the economic scale on which these tax benefits operate. It is a visual approximation of how different tax benefits are related, which we provide for definitional accuracy and clarification.

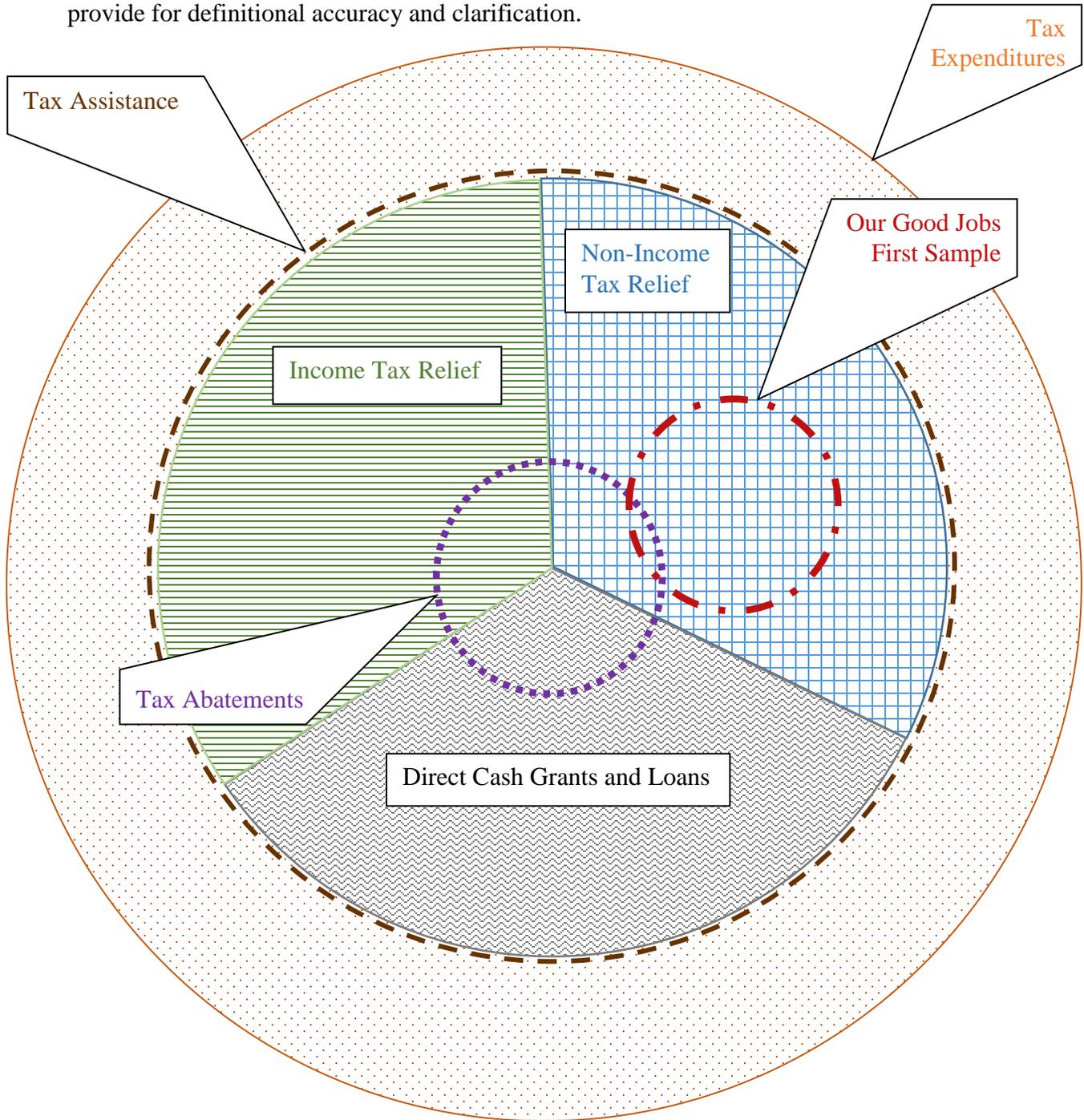


Figure 1 (Not drawn to scale) illustrates how different classifications of tax benefits are related.

Tax Expenditure: revenue losses attributable to provisions of federal tax laws that allow a special exclusion, exemption, or deduction from gross income or that provide a special credit, a preferential rate of tax, or a deferral of tax liability.²⁰

Government Assistance (FASB Topic 832): The FASB does not explicitly define government assistance but states the disclosure under the proposed update is “consistent with those required by IFRS.” The IFRS provides the following definitions under International Accounting Standard 20, ‘Accounting for Government Grants and Disclosure of Government Assistance.’

Government Assistance – an action by government designed to provide an economic benefit specific to an entity or range of entities qualifying under certain criteria. Government assistance for the purpose of this Standard does not include benefits provided only indirectly through action affecting general trading conditions, such as the provision of infrastructure in development areas or the imposition of trading constraints on competitors.

Government Grant – assistance by government in the form of transfers of resources to an entity in return for past or future compliance with certain conditions relating to the operating activities of the entity. They exclude those forms of government assistance which cannot reasonably have a value placed upon them and transactions with government which cannot be distinguished from the normal trading transactions of the entity.

Tax Abatements (GASB 77): A reduction in tax revenues that results from an agreement between one or more governments and an individual or entity in which (a) one or more governments promise to forgo tax revenues to which they are otherwise entitled and (b) the individual or entity promises to take a specific action after the agreement has been entered into that contributes to economic development or otherwise benefits the governments or the citizens of those governments.

²⁰ <https://www.treasury.gov/resource-center/tax-policy/Pages/Tax-Expenditures.aspx>

Appendix B: Accounting for Non-income Taxes

This appendix provides a detailed—albeit incomprehensive—discussion of several common non-income taxes. It also highlights the common accounting treatment of each tax type.

Property tax: a tax on the value of property. Property taxes are levied on real or personal property by city or county governments. Currently, property taxes on product assets are capitalized in cost of goods sold (COGS). Property taxes on investment properties are generally reported as non-operating expense. Finally, property taxes on nonproduction assets are typically included in selling, general, and administrative (SGA) expense.

Sales taxes: a tax imposed on the sale, lease, or rental of goods and/or services. These are levied by state and local governments. Firms collect and remit sales tax on behalf of retail customers. Collections are not recognized in financial statements. Sales taxes paid are usually net with the purchase price. Thus sales taxes can be part of COGS, operating expenses, SGA, etc., depending on the use of the purchased asset.

Use tax: a tax on the use, storage, or consumption of a purchase consumed in one's state of residence and for which no tax was collected in the state of purchase. For purchases, where use tax is required, it is also expensed with (or capitalized into) the purchase price. Thus use taxes are also commonly reported in COGS, operating expenses, and SGA.

Employment taxes: taxes that include federal taxes like Medicare, FICA, FUTA, and analogous state payroll and unemployment taxes. Firms are required to withhold and remit some payroll taxes on behalf of their employees. They are also required to pay a portion of these taxes directly. These taxes are usually accounted for with compensation and thus can be included in COGS, SGA, and executive compensation line items.

Excise taxes: a tax on the purchase of a specific good or activity that is distinct from the sales tax. A classic example of an excise tax is a gas tax that is generally levied by both federal and state governments. These taxes can be combined in general accounts or included in more specific accounts. For example, the Southwest Airlines 2017 10-K reports "Fuel costs per gallon, including fuel tax."

Gross receipts taxes: a state tax type that is based on revenue. Because these taxes ignore expenses, the rates are considerably smaller than general income tax rates. For example, the Washington Business and Occupation (B&O) tax for manufacturers is 0.484 percent of gross receipts. Firms with no income are still required to remit these taxes because they are not based on income. They are generally recorded as operating expenses.

Franchise taxes: a tax for the privilege of doing business in a location. These generally use some measure of assets as a base. For example, the Tennessee franchise tax is approximately 0.25 percent of the greater of net worth or real and tangible personal property. State franchise taxes can also be structured with both capital and income as joint bases. The portion of a franchise tax based on income is reported as income tax expense, and the portion based on capital is reported as an operating expense.

Appendix C: Good Jobs First Subsidy Classifications

The focus of our study is non-income tax relief. We are not studying all forms of government assistance. Hence we exclude forms of assistance that are not tax-based (direct subsidies or grants) and forms of assistance that reduce income taxes. We include non-income tax assistance (property tax abatements, tax rebates, etc.). A detailed table of the government awards included in the GJF data is included below.

Type of Subsidy	Included as Non-income Tax Relief	Tax Assistance Classification see Appendix A
Bond	No	Direct Cash Grant or Loan
Cost reimbursement	No	Direct Cash Grant or Loan
Enterprise zone	Yes	Non-income Tax Relief
Federal allocated tax credit	No	Income Tax Relief
Federal grant	No	Direct Cash Grant or Loan
Federal insurance	No	Direct Cash Grant or Loan
Federal loan or loan guarantee	No	Direct Cash Grant or Loan
Federal tax-exempt bond	No	Direct Cash Grant or Loan
Grant	No	Direct Cash Grant or Loan
Grant/loan hybrid program	No	Direct Cash Grant or Loan
Industrial revenue bond	No	Direct Cash Grant or Loan
Infrastructure assistance	No	Direct Cash Grant or Loan
Loan	No	Direct Cash Grant or Loan
Loan or bond financing	No	Direct Cash Grant or Loan
Megadeal	No	Multiple
Property tax abatement	Yes	Non-income Tax Relief
Tax credit/rebate	Yes	Non-income Tax Relief
Tax credit/rebate and grant	Yes	Non-income Tax Relief
Tax credit/rebate; property tax abatement	Yes	Non-income Tax Relief
Tax increment financing	Yes	Non-income Tax Relief
Training reimbursement	No	Direct Cash Grant or Loan
Venture capital	No	Direct Cash Grant or Loan

Notes. We largely follow Raghunandan (2017) but exclude the “federal allocated tax credit” and “federal tax-exempt bond” categories because these items are included in the income tax provision and can be conflated with income tax avoidance. We also do not include “megadeals” in our sample. Megadeals are multifaceted government awards with a total state and local cost of \$75 million or more. The deals are often a combination of many different types of government assistance, and Good Jobs First identifies them using hundreds of sources. As we are unable to effectively separate the types of government assistance contained within each megadeal, we do not include them in our sample. Additionally, because GJF selects a certain number of megadeals to probe, these data are inherently subject to more selection bias than the rest of the sample that comes from responses to program-level information requests.

Appendix D: Variable Definitions

Variable	Description	Source
<i>AGE</i>	Firm age computed from the corporation's earliest appearance in the Compustat database	Compustat
<i>ANALYST</i>	Number of analysts in the I/B/E/S consensus analyst earnings forecast	I/B/E/S
<i>ARBITRAGE</i>	The deviation of residuals of returns on the value-weighted market return	CRSP
<i>BETA</i>	The beta is calculated by regressing daily firm stock returns (RET) on the market return (VWRETD).	Compustat
<i>BTM</i>	Book to market: common shareholders' equity over market value of equity (CEQ / MVE)	Compustat
<i>CAPEX</i>	The natural log of capital expenditures Ln(CAPX)	Compustat
<i>DGTW RET</i>	Stock return adjusted by the 125 passive portfolios in Daniel, Grinblatt, Titman, and Wermers (1997) created using the firm characteristics market capitalization, book-to-market, and prior-year return	CRSP
<i>GP</i>	Gross profit deflated by assets ((SALE - COGS) / AT)	Compustat
<i>INCOME TAXES AVOIDED</i>	Pre-tax income multiplied by the top corporate statutory rate (35%) less tax expense and scaled by prior-period assets.	Compustat
<i>INSTITUTIONAL OWNERSHIP</i>	Shares held by institutional investors scaled by total shares outstanding	I/B/E/S CRSP
<i>LEVERAGE</i>	Short-term notes and the current and long-term portion of long-term debt (DLTT + DLC) scaled by prior-period assets	Compustat
<i>LTG FORECASTS</i>	Average analyst long-term growth forecast (MEANEST)	I/B/E/S
<i>LN(MVE)</i>	Natural log of market value of equity (PRCC_F x CSHO) measured as of fiscal year-end	Compustat

<i>NET OPERATING ASSETS</i>	Net operating assets (PPENB + ACT - LCT)	Compustat
<i>NON-INCOME TAX RELIEF</i>	Total non-income taxes abated (defined in Appendix B) summed at parent entity scaled by prior-period total assets. We multiply prior-period assets by 1,000 for expositional interpretation.	Good Jobs First Compustat
<i>OPER INC</i>	Operating income after depreciation (OIADP)	Compustat
<i>NET INC</i>	Net income over total assets (NI / AT)	Compustat
<i>PRE-TAX INC%</i>	Pre-tax income over total sales (PI / SALE)	Compustat
<i>SALES</i>	Sales scaled by prior-period assets	Compustat
<i>SALES GROWTH</i>	The percentage change in sales (SALE) compared to the prior period	Compustat

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Table 1
Descriptive statistics

	Mean	Std. dev.	P25	Median	P75
<i>NON-INCOME TAXES RELIEF (raw \$)</i>	2,783,808	7,017,941	68,039	353,217	1,763,003
<i>SALES GROWTH_{t+1}</i>	0.08	0.19	-0.01	0.05	0.13
<i>SALES_{t+1}</i>	1.17	0.79	0.64	0.97	1.43
<i>GP_{t+1}</i>	0.37	0.22	0.22	0.33	0.48
<i>OPER INC_{t+1}</i>	0.11	0.09	0.07	0.10	0.15
<i>NET INC_{t+1}</i>	0.06	0.08	0.03	0.06	0.10
<i>DGTW RETURN_{t+1}</i>	0.03	0.41	-0.16	0.00	0.16
<i>LTG FORECASTS</i>	2.26	2.10	0.96	1.83	3.10
<i>BTM</i>	0.46	0.33	0.25	0.39	0.59
<i>SALES GROWTH_t</i>	0.09	0.20	-0.01	0.06	0.15
<i>CAPEX</i>	625	1,587	45	141	467
<i>PRE-TAX INC%</i>	0.08	0.16	0.04	0.08	0.14
<i>MVE</i>	17,553	37,351	1,429	4,218	14,717
<i>NET OPERATING ASSETS</i>	0.49	0.26	0.30	0.48	0.65
<i>AGE</i>	33.85	19.45	17.00	29.00	53.00
<i>LEVERAGE</i>	0.26	0.20	0.13	0.24	0.36
<i>DGTW RETURN_t</i>	0.04	0.52	-0.16	0.00	0.17
<i>ARBITRAGE</i>	0.04	0.06	0.01	0.02	0.04
<i>BETA</i>	1.11	0.41	0.84	1.07	1.35
<i>ANALYST</i>	12.20	8.23	6.00	11.00	18.00
<i>INSTITUTIONAL OWNERSHIP</i>	0.73	0.19	0.64	0.75	0.85
N	4,884				

Notes. Variable definitions and sources are included in Appendix D. Our sample period covers 2003-2016.

Table 2
Correlation table

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1 <i>NON-INCOME TAX RELIEF</i>		0.11	0.06	0.05	-0.01	-0.03	0.03	-0.12	-0.01	0.13	-0.18	-0.07	-0.20	0.16	-0.16	-0.01	0.04	0.15	0.04	-0.13	-0.07
2 <i>SALES GROWTH_{t+1}</i>	0.09		0.15	0.21	0.23	0.18	0.07	-0.17	-0.19	0.25	-0.16	-0.05	-0.03	0.17	-0.18	0.11	0.15	-0.08	0.05	-0.01	0.02
3 <i>SALES_{t+1}</i>	0.10	0.15		0.47	0.25	0.18	0.03	-0.04	-0.05	0.03	-0.09	-0.09	-0.14	0.02	-0.07	-0.20	0.06	0.03	0.00	-0.05	0.02
4 <i>GP_{t+1}</i>	0.04	0.25	0.50		0.55	0.45	0.02	-0.06	-0.31	0.05	-0.15	0.17	-0.01	0.02	-0.09	-0.27	0.06	-0.03	-0.11	0.11	0.03
5 <i>OPER INC_{t+1}</i>	0.04	0.30	0.32	0.60		0.84	0.04	0.18	-0.39	0.03	0.12	0.56	0.29	-0.04	0.05	-0.08	0.11	-0.29	-0.20	0.22	0.05
6 <i>NET INC_{t+1}</i>	0.04	0.26	0.25	0.52	0.87		0.04	0.16	-0.36	0.00	0.14	0.54	0.30	-0.02	0.08	-0.13	0.12	-0.30	-0.17	0.21	0.02
7 <i>DGTW RETURN_{t+1}</i>	0.01	0.14	0.04	0.05	0.13	0.13		-0.06	0.13	0.00	-0.05	-0.11	-0.09	-0.04	-0.03	0.03	-0.05	0.22	0.07	-0.05	-0.06
8 <i>LTG FORECASTS</i>	-0.13	-0.20	-0.07	-0.06	0.19	0.16	-0.03		-0.06	-0.17	0.40	0.24	0.40	-0.16	0.27	0.04	-0.08	-0.25	-0.20	0.23	0.04
9 <i>BTM</i>	-0.01	-0.19	-0.06	-0.37	-0.53	-0.48	0.00	-0.07		-0.11	-0.09	-0.21	-0.40	0.08	-0.05	-0.05	-0.11	0.43	0.14	-0.26	0.00
10 <i>SALES GROWTH</i>	0.11	0.34	0.07	0.14	0.18	0.16	-0.02	-0.18	-0.16		-0.11	0.00	-0.03	0.22	-0.21	0.17	0.04	0.06	0.11	0.02	0.04
11 <i>LN(CAPEX)</i>	-0.19	-0.16	-0.15	-0.19	0.06	0.07	-0.01	0.46	-0.10	-0.11		0.25	0.82	-0.04	0.40	0.18	-0.05	-0.32	-0.23	0.54	-0.01
12 <i>PRE-TAX INC%</i>	-0.04	0.08	-0.32	0.16	0.57	0.56	-0.01	0.30	-0.36	0.13	0.20		0.36	-0.08	0.11	-0.02	0.02	-0.37	-0.21	0.24	0.06
13 <i>LN(MVE)</i>	-0.23	0.00	-0.21	-0.01	0.30	0.31	0.00	0.49	-0.39	0.00	0.81	0.45		-0.21	0.37	0.06	0.01	-0.47	-0.30	0.68	-0.02
14 <i>NET OPERATING ASSETS</i>	0.21	0.12	0.10	0.02	0.00	0.02	-0.05	-0.19	0.12	0.13	-0.03	-0.03	-0.23		-0.17	0.06	0.03	0.14	0.20	-0.10	-0.01
15 <i>AGE</i>	-0.15	-0.21	-0.03	-0.08	0.04	0.06	0.01	0.33	-0.04	-0.23	0.41	0.09	0.38	-0.15		0.01	-0.02	-0.23	-0.15	0.08	-0.13
16 <i>LEVERAGE</i>	-0.07	-0.01	-0.23	-0.30	-0.12	-0.22	0.02	0.10	-0.06	0.02	0.22	-0.07	0.08	-0.03	0.07		0.01	-0.02	-0.02	-0.08	0.02
17 <i>DGTW RETURN_t</i>	0.01	0.23	0.07	0.10	0.24	0.24	-0.03	-0.07	-0.20	0.14	-0.01	0.10	0.09	0.00	-0.01	0.02		0.09	0.10	-0.04	0.00
18 <i>ARBITRAGE</i>	0.20	0.00	0.16	0.05	-0.27	-0.26	-0.04	-0.45	0.27	0.09	-0.45	-0.40	-0.61	0.24	-0.39	-0.13	-0.06		0.29	-0.24	-0.09
19 <i>BETA</i>	0.09	0.05	0.06	-0.10	-0.20	-0.17	0.01	-0.24	0.14	0.10	-0.25	-0.26	-0.32	0.19	-0.15	-0.07	-0.01	0.43		-0.18	0.14
20 <i>ANALYST</i>	-0.15	0.01	-0.10	0.09	0.24	0.25	-0.01	0.30	-0.28	0.05	0.56	0.31	0.69	-0.12	0.11	-0.05	0.00	-0.34	-0.19		0.05
21 <i>INSTITUTIONAL OWNERSHIP</i>	-0.04	0.08	0.04	0.03	0.00	-0.03	-0.03	-0.01	0.08	0.10	-0.12	-0.06	-0.12	0.00	-0.20	0.02	0.00	0.14	0.15	0.03	

Notes. This table presents correlations for all dependent and independent variables used in the main regression analysis. Our sample period covers 2003-2016. The non-income tax relief measure in this table is the scaled value of the non-income tax relief rather than the decile ranking included in the regression analysis. Pearson (Spearman) correlations are above (below) the diagonal.

Table 3 The association between non-income tax relief and future accounting performance**Panel A: Primary results**

	(1) SALES GROWTH _{t+1}	(2) SALES _{t+1}	(3) GP _{t+1}	(4) OPER INC _{t+1}	(5) NET INC _{t+1}
<i>NON-INCOME TAX RELIEF</i>	0.038*** (0.008)	0.126*** (0.027)	0.024*** (0.007)	0.013*** (0.003)	0.009*** (0.003)
<i>Growth Expectations</i>					
<i>LTG FORECASTS</i>	-0.005*** (0.001)	0.004 (0.005)	0.001 (0.001)	0.003*** (0.001)	0.002*** (0.001)
<i>BTM</i>	-0.021** (0.010)	-0.402*** (0.034)	-0.204*** (0.009)	-0.065*** (0.004)	-0.053*** (0.004)
<i>SALES GROWTH</i>	0.104*** (0.014)	0.273*** (0.048)	0.025* (0.013)	0.003 (0.005)	-0.009* (0.005)
<i>LN(CAPEX)</i>	-0.042*** (0.003)	0.079*** (0.012)	-0.010*** (0.003)	-0.008*** (0.001)	-0.007*** (0.001)
<i>General Firm Characteristics</i>					
<i>PRE-TAX INC%</i>	-0.104*** (0.016)	-0.108* (0.057)	0.271*** (0.015)	0.250*** (0.006)	0.218*** (0.006)
<i>LN(MVE)</i>	0.036*** (0.004)	-0.139*** (0.014)	-0.021*** (0.004)	0.008*** (0.002)	0.010*** (0.002)
<i>NET OPERATING ASSETS</i>	0.125*** (0.011)	-0.247*** (0.040)	0.032*** (0.011)	0.014*** (0.004)	0.025*** (0.004)
<i>AGE</i>	-0.001*** (0.000)	-0.001 (0.001)	0.000 (0.000)	-0.000*** (0.000)	-0.000 (0.000)
<i>LEVERAGE</i>	0.146*** (0.014)	-0.712*** (0.048)	-0.200*** (0.013)	-0.023*** (0.005)	-0.040*** (0.005)
<i>Market Characteristics</i>					
<i>DGTW RET</i>	0.038*** (0.005)	0.066*** (0.016)	0.010** (0.004)	0.012*** (0.002)	0.013*** (0.002)
<i>ARBITRAGE</i>	-0.303*** (0.060)	0.227 (0.212)	0.361*** (0.056)	0.016 (0.023)	-0.030 (0.023)
<i>BETA</i>	-0.001 (0.007)	-0.101*** (0.026)	-0.026*** (0.007)	-0.012*** (0.003)	-0.008*** (0.003)
<i>Analyst Attention / Visibility</i>					
<i>ANALYST</i>	0.000 (0.000)	-0.004*** (0.002)	0.002*** (0.000)	0.000 (0.000)	-0.000 (0.000)
<i>INSTITUTIONAL OWNERSHIP</i>	-0.008 (0.013)	-0.238*** (0.047)	-0.016 (0.013)	-0.011** (0.005)	-0.016*** (0.005)
<i>Fixed effects</i>	Industry and Year	Industry and Year	Industry and Year	Industry and Year	Industry and Year
<i>N</i>	4,884	4,884	4,884	4,884	4,884
<i>R²</i>	0.288	0.495	0.529	0.483	0.436

Table 3, continued**Panel B: Results with firm fixed effects**

	(1)	(2)	(3)	(4)	(5)
	SALES GROWTH _{t+1}	SALES _{t+1}	GP _{t+1}	OPER INC _{t+1}	NET INC _{t+1}
<i>NON-INCOME TAX RELIEF</i>	0.043*** (0.010)	0.052*** (0.016)	0.015*** (0.006)	0.010*** (0.003)	0.006 (0.004)
<i>Growth Expectations</i>					
<i>LTG FORECASTS</i>	-0.011*** (0.002)	0.003 (0.003)	0.000 (0.001)	0.002** (0.001)	0.000 (0.001)
<i>BTM</i>	-0.058*** (0.014)	-0.403*** (0.022)	-0.137*** (0.008)	-0.060*** (0.004)	-0.068*** (0.005)
<i>SALES GROWTH</i>	-0.116*** (0.016)	0.138*** (0.024)	0.021** (0.008)	0.034*** (0.005)	0.019*** (0.006)
<i>LN(CAPEX)</i>	-0.050*** (0.006)	-0.033*** (0.010)	-0.011*** (0.003)	-0.012*** (0.002)	-0.011*** (0.002)
<i>General Firm Characteristics</i>					
<i>PRE-TAX INC%</i>	-0.199*** (0.024)	0.013 (0.037)	0.054*** (0.013)	0.079*** (0.007)	0.044*** (0.008)
<i>LN(MVE)</i>	0.065*** (0.008)	-0.122*** (0.013)	-0.017*** (0.004)	0.014*** (0.003)	0.013*** (0.003)
<i>NET OPERATING ASSETS</i>	0.227*** (0.020)	0.085*** (0.030)	0.041*** (0.011)	-0.003 (0.006)	0.019*** (0.007)
<i>AGE</i>	0.064* (0.034)	-0.035 (0.052)	-0.010 (0.018)	-0.005 (0.010)	-0.019 (0.012)
<i>LEVERAGE</i>	0.238*** (0.020)	-0.506*** (0.031)	-0.169*** (0.011)	-0.060*** (0.006)	-0.052*** (0.007)
<i>Market Characteristics</i>					
<i>DGTW RET</i>	0.030*** (0.005)	0.029*** (0.007)	0.008*** (0.002)	0.007*** (0.001)	0.008*** (0.002)
<i>ARBITRAGE</i>	-0.300*** (0.073)	-0.318*** (0.112)	0.061 (0.039)	0.007 (0.022)	0.011 (0.025)
<i>BETA</i>	0.002 (0.009)	0.004 (0.014)	-0.001 (0.005)	-0.001 (0.003)	0.005 (0.003)
<i>Analyst Attention / Visibility</i>					
<i>ANALYST</i>	-0.001** (0.001)	0.000 (0.001)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
<i>INSTITUTIONAL OWNERSHIP</i>	-0.001 (0.025)	-0.037 (0.038)	-0.028** (0.013)	-0.012 (0.008)	-0.010 (0.009)
<i>Fixed effects</i>	Firm and Year	Firm and Year	Firm and Year	Firm and Year	Firm and Year
<i>N</i>	4,884	4,884	4,884	4,884	4,884
<i>R²</i>	0.288	0.495	0.529	0.483	0.436

Notes. This table presents the results of OLS estimates of equation (1), which tests the association between future firm performance measures and non-income tax relief. Our sample period covers 2003-2016. Panel A presents the results with industry and year fixed effects. Panel B presents the results with firm and year fixed effects. See Appendix D for all variable definitions and sources. All continuous variables are winsorized at the 1% and 99% levels. *, **, and *** indicate statistical significance at the two-tailed 10%, 5%, and 1% level.

Table 4 The association between non-income tax relief and future abnormal returns

	DGTW RET _{t+1}
<i>NON-INCOME TAX RELIEF</i>	0.043** (0.019)
<i>Growth Expectations</i>	
<i>LTG FORECASTS</i>	-0.006* (0.003)
<i>BTM</i>	0.066*** (0.024)
<i>SALES GROWTH</i>	-0.014 (0.034)
<i>LN(CAPEX)</i>	-0.000 (0.008)
<i>General Firm Characteristics</i>	
<i>PRE-TAX INC%</i>	-0.072* (0.040)
<i>LN(MVE)</i>	0.014 (0.010)
<i>NET OPERATING ASSETS</i>	-0.140*** (0.028)
<i>AGE</i>	-0.000 (0.000)
<i>LEVERAGE</i>	0.106*** (0.034)
<i>Market Characteristics</i>	
<i>DGTW RET</i>	-0.062*** (0.011)
<i>ARBITRAGE</i>	1.631*** (0.151)
<i>BETA</i>	0.014 (0.018)
<i>Analyst Attention / Visibility</i>	
<i>ANALYST</i>	-0.001 (0.001)
<i>INSTITUTIONAL OWNERSHIP</i>	-0.085** (0.034)
<i>Fixed effects</i>	Industry and Year
<i>N</i>	4,884
<i>R²</i>	0.081

Notes. This table presents the results of OLS estimates of equation (2), which tests the association between future abnormal returns and non-income tax relief. Our sample period covers 2003-2016. We include industry and year fixed effects (untabulated). See Appendix D for all variable definitions and sources. All continuous variables are winsorized at the 1% and 99% levels (*DGTWRET* is not winsorized). *, **, and *** indicate statistical significance at the two-tailed 10%, 5%, and 1% level.

Table 5

Calendar-time, four-factor model estimation results for portfolios formed on the level of non-income tax relief

	Non-Income Taxes Avoided Portfolio									
	Low 1	2	3	4	5	6	7	8	9	High 10
<i>Intercept</i>	0.0022	0.0017	0.0026	0.0027	0.0065	0.0027	0.0034	0.0044	0.0040	0.0065
<i>Ret_{mkt}-R_{rf}</i>	1.0214	0.9991	1.0312	1.0223	0.9998	1.0307	1.0536	0.9985	1.0742	1.1052
<i>SMB</i>	0.1316	0.2992	0.2499	0.4662	0.3507	0.5202	0.5215	0.6097	0.7209	0.8506
<i>HML</i>	0.0627	0.0186	0.0284	0.0063	0.0956	0.1876	0.1366	0.0069	0.0715	-0.0346
<i>UMD</i>	-0.0868	-0.1721	-0.0932	-0.0686	-0.1472	-0.1915	-0.0721	-0.1829	-0.1626	-0.0934
# months in time-series	165	165	165	165	165	165	165	165	165	165
<i>R</i> ²	0.86	0.86	0.84	0.86	0.88	0.89	0.87	0.81	0.84	0.81

High - Low

Intercept Difference	<i>t</i> -stat
0.0044	1.73*

Notes. This table presents the results of monthly calendar-time portfolio tests. We form ten portfolios based on *NON-INCOME TAX RELIEF*. We include portfolio controls for the Fama-French-Carhart factors associated with size, value, and momentum. The intercept represents the average, monthly abnormal return for each portfolio.

Table 6

Non-income tax relief, income tax avoidance and future performance

	(1) SALES GROWTH _{t+1}	(2) SALES _{t+1}	(3) GP _{t+1}	(4) OPER INC _{t+1}	(5) NET INC _{t+1}	(6) DGTW RET _{t+1}
<i>NON-INCOME TAX RELIEF</i>	0.038*** (0.008)	0.126*** (0.027)	0.024*** (0.007)	0.013*** (0.003)	0.009*** (0.003)	0.043** (0.019)
<i>INCOME TAXES AVOIDED</i>	0.003 (0.009)	-0.094*** (0.031)	-0.010 (0.008)	-0.008** (0.003)	0.012*** (0.003)	0.013 (0.022)
Controls for:						
Growth Expectations	Included	Included	Included	Included	Included	Included
General Firm Characteristics	Included	Included	Included	Included	Included	Included
Market Characteristics	Included	Included	Included	Included	Included	Included
Analyst Attention / Visibility	Included	Included	Included	Included	Included	Included
<i>Fixed effects</i>	Industry and Year	Industry and Year	Industry and Year	Industry and Year	Industry and Year	Industry and Year
<i>N</i>	4,884	4,884	4,884	4,884	4,884	4,884
<i>R</i> ²	0.288	0.496	0.530	0.484	0.437	0.081

Notes. This table presents the results of OLS estimates of equation (1) in Columns 1-3 and equation (2) in Column 4. These tests also include a measure of income tax avoidance as an additional independent variable. Our sample period covers 2003-2016. Industry and year fixed effects are included (untabulated). See Appendix D for all variable definitions and sources. All continuous variables are winsorized at the 1% and 99% levels (*DGTWRET* is not winsorized). *, **, and *** indicate statistical significance at the two-tailed 10%, 5%, and 1% level.

Table 7

The association between non-income tax relief and future abnormal returns with decile-ranked non-income tax disclosure environment

	Ratio of non-income tax to income tax			
	Deciles 5-9 Above median	Deciles 0-4 Below median	Deciles 8-9 Highest 20%	Deciles 0-1 Lowest 20%
	DGTWRET _{t+1}	DGTWRET _{t+1}	DGTWRET _{t+1}	DGTWRET _{t+1}
<i>NON-INCOME TAX RELIEF</i>	0.051* (0.030)	0.043* (0.026)	0.038 (0.049)	0.063* (0.045)
<i>Controls for:</i>				
Growth Expectations	Included	Included	Included	Included
General Firm Characteristics	Included	Included	Included	Included
Market Characteristics	Included	Included	Included	Included
Analyst Attention / Visibility	Included	Included	Included	Included
<i>Fixed effects</i>	Industry and Year	Industry and Year	Industry and Year	Industry and Year
<i>N</i>	2,405	2,479	934	959
<i>R</i> ²	0.095	0.099	0.100	0.136

Notes. This table presents the results of OLS estimates of equation (2), which tests the association between future abnormal returns and non-income tax relief. Our sample period covers 2003-2016. We include industry and year fixed effects (untabulated). We partition the sample at different levels of disclosure relating to non-income taxes. To quantify non-income tax disclosure, we search firms' 10-Ks and count the number of times a non-income tax term is referenced. Our list on non-income tax terms includes "employment tax," "excise tax," "FICA," "franchise tax," "gross receipts tax," "other tax," "payroll tax," "property tax," "sales tax," "unemployment tax," and "use tax." We subtract this count from the total number of times the term "tax" is referenced to calculate income tax disclosure. We then create a ratio of non-income tax references to income tax references to calculate the disclosure environment surrounding non-income taxes per firm per year and split our sample firms into deciles based on this ratio. See Appendix D for all variable definitions and sources. All continuous variables are winsorized at the 1% and 99% levels (*DGTWRET* is not winsorized). *, **, and *** indicate statistical significance at the two-tailed 10%, 5%, and 1% level.

Table 8

The association between non-income tax relief and future abnormal returns around earnings announcement

	DGTWRET EA _{t+1}
<i>NON-INCOME TAX RELIEF</i>	0.020*** (0.007)
Controls for:	
Growth Expectations	Included
General Firm Characteristics	Included
Market Characteristics	Included
Analyst Attention / Visibility	Included
<i>Fixed effects</i>	Industry and Year
<i>N</i>	4,348
<i>R</i> ²	0.026

Notes. This table presents the results of OLS estimates of equation (2) use two-day trading windows surrounding the four quarterly earnings announcements in year $t+1$. The two-day trading windows are constructed as the day of and day following earnings releases. Our sample period covers 2003-2016. We include industry and year fixed effects (untabulated). See Appendix D for all variable definitions and sources. All continuous variables are winsorized at the 1% and 99% levels (*DGTWRET* is not winsorized). *, **, and *** indicate statistical significance at the two-tailed 10%, 5%, and 1% level.