Tax Expenditure and Transparency Laws in the U.S.*

Jesus Rodriguez and Dario Tortarolo†

September 25, 2025

PRELIMINARY AND INCOMPLETE

Abstract

We study to what extent the implementation of evaluation laws affects reported tax expenditures. We exploit the staggered introduction of tax incentives evaluation laws (TIELs) in US states, from 1999 to 2019. Using a novel digitized database of states' tax expenditures and an event study approach based on the year these laws were enacted, we show that evaluation laws matter for transparency. We find that following the implementation of TIELs, *reported* tax expenditures increased on average by 14%, equivalent to about 2.44 billion USD at 2023 prices. This effect persists even four years after the laws are introduced. However, we find no changes in states' tax revenues and direct spending after the TIELs were passed, which indicates that the observed higher reported tax expenditures correspond to previously hidden undisclosed tax expenditures provisions. We explore some mechanisms and find that the results are driven by states that are "making progress" in strengthening evaluation practices and by those that have a long budget cycle. Moreover, we explore potential electoral consequences for the ruling party. We find no effect on incumbent voting share. Finally, using text analysis to identify tax expenditure provisions in the tax legislation, we do not find a similar transparency effect in trying to make tax expenditure clauses more understandable for taxpayers.

Key words: transparency; tax incentives; tax expenditures; electoral outcomes; event study; tax complexity.
JEL codes: K34, D73, H71, H77, H83

*We thank Emmanuel Saez and Gabriel Zucman for their valuable insights.

†Rodriguez: Ph.D. candidate, University of Nottingham. Email: (jesus.rodriguez@nottingham.ac.uk). Tortarolo: Research Economist, World Bank, Development Research Group; Email: (dtortarolo@worldbank.org).

1 Introduction

Tax expenditures play a significant role in US states fiscal policy, accounting for 4% of states' GDP and they have been widely used to encourage specific economic activities and consumption patterns, improve living conditions of poor households, and to stimulate firm innovation (Bastian and Michelmore, 2018; Dechezleprêtre et al., 2023; Saez, 2004; Wilson, 2009). However, tax expenditures are highly regressive, meaning that they mostly benefit middle and higher-income earners. Some academics argue that tax incentives are not an effective tool to promote economic development at the regional level and usually fail to attract private investment to local labor markets. Instead, local government politicians use corporate tax cuts to attach their name to investment projects to gain electoral benefits (Howard, 1999; Jensen and Malesky, 2018; Poterba, 2011; Slattery and Zidar, 2020).

Over the last few decades, there has been an increasing demand by policymakers, public officials, and state legislators to evaluate the effectiveness of tax expenditure provisions as a way to promote evidence-based policymaking and improve governance, transparency and accountability in the use of public funds (Adsera et al., 2003; Benito and Bastida, 2009; Thrall and Jensen, 2022). Since 2012, 23 US state legislatures have passed Tax Incentives Evaluation Laws (TIELs). The purpose of these laws is to regularly evaluate economic development tax incentives to determine whether they are achieving the policy goals for which they were created.

In this paper, we study to what extent the implementation of evaluation laws affects reported tax expenditures. We exploit the staggered introduction of tax incentives evaluation laws (TIELs) in US states, from 1999 to 2019. Using a novel digitized database of states' tax expenditures and a dynamic DiD event-study approach based on the year these laws were enacted, We show that evaluation laws matter for transparency. We find that following the implementation of TIELs, *reported* tax expenditures increased on average by 14%, equivalent to about 2.44 billion USD at 2023 prices. This effect persists even four years after the laws are introduced and is mainly driven by corporate (15%), sales and use taxes (21%).

We also explore whether this increase in reported tax expenditures mechanically translates into a decline in tax collections or a change in total government spending as a result of an expansive fiscal policy taken by the state government. Our evidence suggests that neither of these possibilities is at play, suggesting that the change in reported tax expenditures is likely the result of previously misreported or undisclosed tax expenditure provisions.

One of the main challenges of this project is to collect data on tax expenditure pro-

visions and foregone revenues associated with preferential tax treatments for all 50 U.S. states. The information is not presented in a uniform format and the way each state reports tax expenditures varies substantially, not only between states but also over time. As a result, there is a lack of studies focusing on tax expenditures at the state level in the US. We fill in this gap by taking these official reports to build a novel dataset that covers the period 2009-2022, and we evaluate the impact of the introduction of tax incentive evaluation laws on reported tax expenditures.

We contribute to the public economics literature by building a novel and comprehensive dataset of tax expenditure provisions at the state level for all the U.S. states and by analyzing the effect of transparency laws on reported tax expenditure. To the best of our knowledge, this is the first database that comprises and centralizes tax incentives for businesses, individuals, and corporations, considering the challenges in terms of different formatting, reporting rules, tax bases, and legislative requirements across states. This dataset will complement the work of Slattery and Zidar (2020) who create a financial incentives dataset only focusing on businesses.

A number of studies have focused on examining the economic impact of tax expenditures in different outcomes such as labour force participation, home ownership, child poverty, intergenerational mobility, etc Eissa and Liebman (1996); Chetty et al. (2013); Poterba (2011); Bastian (2020); Gruber et al. (2021); Nallareddy et al. (2022). These studies provide valuable insights into the potential benefits and drawbacks of tax expenditures. However, there is a gap in the literature regarding the transparency and accountability of these policies, particularly at the state level.

We also contribute to the literature on informational frictions and salience of tax expenditures by showing that the disclosure of actual tax expenditure amounts did not translate into a political penalty for the incumbent party. This suggests that voters were unaware regarding the newly disclosed information. Chetty et al. (2009); Chetty and Saez (2013); Finkelstein (2009); Jones (2010); Bhargava and Manoli (2015); Goldin (2015).

The paper is organized as follows. In Section 2 we describe the institutional setting and the change in evaluation of economic development incentives. In Section 3 we present data sources and challenges to build the dataset. The empirical strategy and preliminary results are presented in Section 4. In Section 5, we explore some of the mechanisms and drivers of the reporting change. Finally, Section 6 ends with some concluding remarks.

2 Institutional setting

2.1 Direct vs Indirect Expenditures (Tax Expenditures)

State governments in the US allocate public funds in two ways: directly through spending programs included in the annual public budget, or indirectly via tax benefits or preferential tax treatments. The first type of expenditure involves a direct disbursement of money. The second type of expenditure, known in the public finance literature as "tax expenditures," reduces tax liabilities for specific taxpayers to encourage certain economic activities and benefit particular segments of society. They usually take the form of tax credits, deductions, exclusions, exemptions, and other preferential treatments. In general, this fiscal policy tool represents a financial loss for the state in terms of foregone revenues that would otherwise have been collected to fund public services.

Direct spending programs have to be approved by each state's legislature every budget cycle and therefore have to pass through a rigorous process of documentation, discussions, and accountability. In contrast, once tax expenditures are enacted they are not required to be approved again every budget cycle and they are usually in place indefinitely—unless the legislative body repeals them—without examining whether they achieve the goals for which they have been originally created and so they are not subject to the same level of scrutiny compared to on-budget expenditures (Burman and Phaup, 2012).

2.2 Tax expenditures reports

In the US, 49 states have the legal requirement to publish official reports on tax expenditures detailing information about the estimated foregone revenues due to tax breaks, deductions, exemptions, credits, exclusions and any other form of preferential tax treatment the tax authority may provide to citizens. Among the states that regularly publish information, 46 (94%) publish data biannually. The regular publication of these reports constitute an important feature of our identification strategy as they provide information before and after the roll-out of the tax incentive evaluation laws.

In terms of the reports' content, states do not have standard guidelines to follow provided by a central institution, so usually the state's Department of Revenues is the Unit in charge of complying with the legal mandate. As a result, there is a lot of heterogeneity in the methodology, formatting and coverage of different tax expenditures provisions and tax bases affected across states. In addition to the amount of foregone revenues, most of the states include the legal citation from the state statutes, a description of how each tax expenditure provision works, and the type of tax expenditure.

Some states report the number of beneficiaries of each tax expenditure, the year of enactment of each provision and the cost to local governments separately. Very few states include the program categories for each tax expenditure, the rationale for each expenditure and the distribution of benefits by income level.

2.3 The Reform: Tax Incentives Evaluation Laws (TIEL)

Over the last few years, in many US states, there has been a growing demand and interest from policymakers, public officials, and legislators to investigate whether tax expenditures have been achieving the policy goals for which they have been created. In this regard, Tax incentive evaluation laws (TIELs) have emerged as a policy tool for states to improve oversight and accountability of tax expenditures. TEs such as tax credits, exemptions, or preferential rates, represent foregone tax revenue for states and are substantial - on average accounting for 19% of state total spending (in 2015). However, these expenditures often escape the scrutiny applied to direct spending programs in the budgetary process. Without regular evaluation of effectiveness, tax expenditures risk not achieving their intended policy goals and reducing government revenue without corresponding benefits to society.

TIELs formally mandate the periodic, systematic review of major state TEs to assess their impact and performance. The main goals of TIELs are to (1) increase transparency around TEs, (2) promote evidence-based policymaking, and (3) require legislative hearings to discuss evaluations. By 2019, 15 states have implemented some form of TIEL, with adoption growing rapidly since 2010 (see Figure 2). These laws require state agencies to evaluate TEs over a certain dollar amount by conducting cost-benefit analyses, calculating return-on-investment, and determining whether programs could be more effective if funds were used for direct expenditures. Evaluations typically occur every 3-5 years or are triggered when TEs are scheduled to expire.

By mandating regular evaluations, TIELs provide a structured approach to assessing the economic and fiscal impacts of tax incentives. This ensures a continuous feedback loop where policies can be adjusted based on empirical evidence, enhancing the effectiveness of tax incentives in achieving economic development goals while protecting state budgets. The adoption and refinement of TIELs across states constitute a critical step toward more accountable, transparent, and effective fiscal governance of tax expenditures.

3 Data Sources

We built a panel using detailed information from yearly (or biennial) tax expenditure reports taken from state government websites. Tax expenditure reports differ widely across states in terms of formatting, reporting rules, and the type of tax base they cover. Many of the states do not have a summary table with the aggregate amount of foregone revenues as a result of tax expenditures; instead, they provide a long list by type of tax base with the estimated tax expenditures, a description of the tax expenditure provision, enactment year, and sometimes the number of beneficiaries. Taking into account that formats are not uniform, in order to build the dataset from these PDF reports, we manually take each tax expenditure provision into a spreadsheet. It is important to mention that given the structure of these reports, there is no machine learning algorithm one can apply to automatically extract the information of tax expenditure provisions for all states.

We complete our panel dataset with tax revenues taken from the U.S. Census Bureau and total government spending from the Tax Policy Center. These variables allow us to have a greater view of the fiscal policy implemented by each state before and after the introduction of evaluation practices. We also use a statewide measure of voting share by political party taken row electoral results data from (Algara and Amlani, 2021) on US elections (senate, gubernatorial, house, and presidential). To measure complexity in the tax expenditures provisions, we use a corpus of US state statutes from the State "Sessions Laws" over the period 1999-2022 taken from HeinOnline Library. In Table 2, we present summary statistics for our main outcome variables at period $t-1$, the last year before the implementation of the TIEL.

4 Empirical strategy and preliminary results

4.1 Event-study approach

We implement an event-study approach that exploits unique variation that arises from the staggered introduction of tax incentive evaluations laws (see Figure 2). We leverage the quasi-random spread of evaluation practices at the state level as an exogenous shock (see Figure 3) to estimate the causal effect of evaluation practices on the amount of tax expenditures reported and other outcomes such as tax revenues and total government spending. We define the *event* as the year t at which each state implements rigorous evaluation procedures to determine the effectiveness of economic development tax incentives and whether they are well-designed to achieve their policy objectives. We

center all states around $T = 0$ and our baseline before the introduction of TIELs is year $t - 1$. Our estimation sample comprises an unbalanced panel of states that we observed between 1992 and 2023.

We estimate the following TWFE specification by OLS:

$$\log y_{it} = \mu_t + \gamma_i + \sum_{k \neq -1} \beta_k \cdot T_{it}^k + \varepsilon_{it} \tag{1}$$

Where T_{it}^k are event-time dummies for the event happening k years away. Note that $k = 0$ is the first year the state passes the incentive evaluation law, and following the standard in the literature, we take $k = -1$ as the omitted category in our estimations and figures. The dependent variable is denoted as y_{it}, and we take the logarithm of the outcome variable (i.e, tax expenditures, tax revenues, and total spending) for state i at time t as this helps linearize exponential growth relationships and stabilize variance across the sample. Additionally, in our specification, we add year and state fixed effects as standard in the literature. Year fixed effects are denoted by μ_t, which captures all unobserved factors that affect all states similarly in a given year. By including this term, the model controls for time-specific shocks or trends that might influence the outcome variable. State fixed effects are denoted by γ_i, which captures all unobserved, time-invariant characteristics of each state (e.g., states' inherent economic conditions, demographic trends, political environment, etc). This term allows to control for differences between states that do not change over time.

We also calculate the reduced-form estimates by pooling all the β_k coefficients before ($logy_{before} = (\beta_{-4} + \beta_{-3} + ... + \beta_{-2} + 0)/4$) and after ($logy_{after} = (\beta_0 + \beta_1 + ... + \beta_5)/5$) the roll-out of the TIEL. We do so in a regression framework, which allows to easily compute the standard errors. We implement the following specification with standard errors clustered by state and year (Cameron et al., 2011; Carlino et al., 2023):

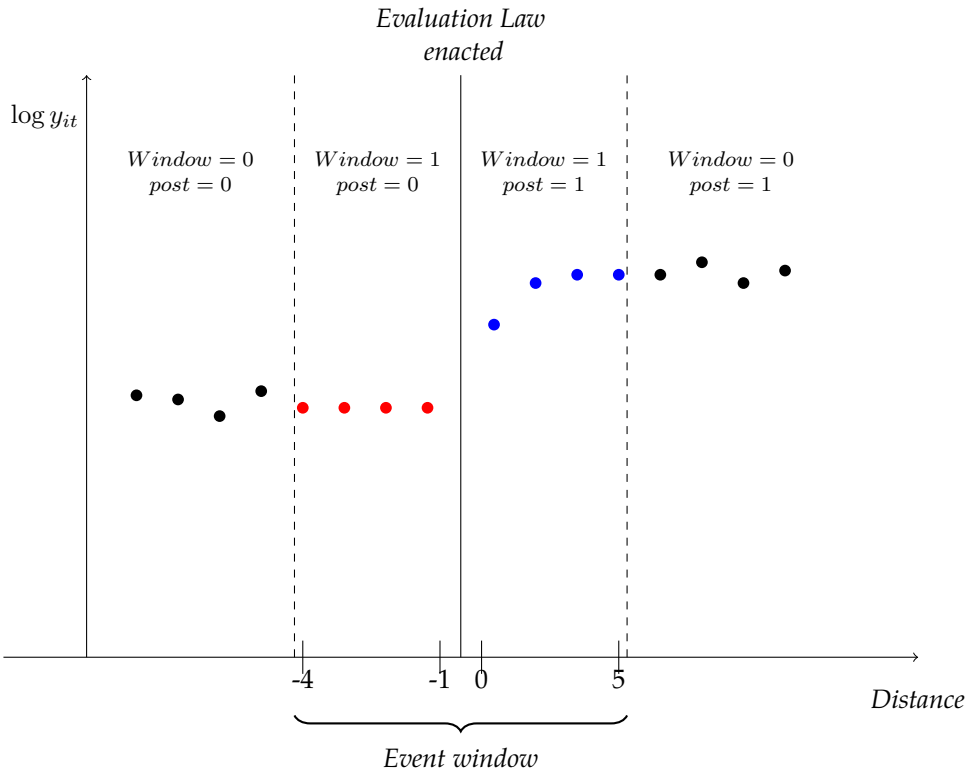
$$\begin{aligned} \log y_{it} = \mu_t + \gamma_i + \beta_1 \cdot Window_{it} + \beta_2 \cdot Window_{it} \cdot Post_{it} \\ + \beta_3 \cdot (1 - Window_{it}) \cdot Post_{it} + \epsilon_{it} \end{aligned} \tag{2}$$

where the variable $Window$ takes the value of one in the periods/years that belong to the time span [-4;5] and zero otherwise. The variable $Post_{it}$ takes the value of 1 after state i has passed the Tax Incentive Evaluation Law, and zero before.

When we apply the expected value operator to equation (2), the following scenarios emerge:

- [A] $E(\log y_{it}/Window = 0, Post = 0) = \mu_t + \gamma_i$
- [B] $E(\log y_{it}/Window = 1, Post = 0) = \mu_t + \gamma_i + \beta_1$
- [C] $E(\log y_{it}/Window = 1, Post = 1) = \mu_t + \gamma_i + \beta_1 + \beta_2$
- [D] $E(\log y_{it}/Window = 0, Post = 1) = \mu_t + \gamma_i + \beta_3$

In a difference-in-differences framework, the coefficient of interest β_2 may be recovered by taking the difference between $[C]$ and $[B]$. We can illustrate this procedure by looking at the setting graphically, as follows:



4.2 The Effect of TIELs on TEs, tax revenues, and spending

Figure 4 shows event study estimates of what happened to reported tax expenditure before and after the tax incentive evaluation laws were passed across several US states. Panel (a) shows the two way fixed effects OLS estimation, the horizontal axis represents the years before and after the reform, and the vertical axis represents the impact on the logarithm of reported tax expenditure that we digitized from states' reports. The dashed vertical line indicates the year before the reforms went into effect. The vertical bars are 95 percent confidence intervals. The Figure shows that after the implementation of TIEL reported tax

expenditures increase more than 10% even 4 years after the evaluation practices were in place.

Our results are robust to those estimated with recently proposed alternatives to TWFE regressions that allows for heterogeneous dynamic treatment effects, meaning multiple periods and variation in treatment timing (Borusyak et al., 2021; Callaway and Sant'Anna, 2021; De Chaisemartin and d'Haultfoeuille, 2023). This is the case of our setting, in which there are more than two time periods (years) and states are treated at different points on time. The main concern with TWFE regressions is associated with situations with a staggered implementation of the treatment in which "forbidden comparisons" between already treated units may occur (Goodman-Bacon, 2021). In our setting, the problem may arise if the average treatment effect in the first year after the implementation of evaluation practices is different for states switching, for example, in 2013 compared to those states switching in 2015. Panel (b) in Figure 4 shows the implementation of five alternatives estimators that do not restrict treatment effect heterogeneity between groups and over time. The results suggests that our TWFE results are robust to the inclusion of all the recent advances and alternative estimators in the literature. One possible explanation is the fact that the impact of reported tax expenditures is not very heterogeneous or it may be the case that the event-study regression is quite robust to the presence of heterogeneous treatment effects.

A policy-relevant question is whether this effect is real or not. That is, whether states are in practice increasing the number of provisions or the amount of the existing ones. A priori, if the effect was real, then states would collect fewer taxes and we would observe a decrease in states' tax revenue. Notwithstanding, Figure 5 shows a convincing and precise null effect on tax revenues. This evidence suggests that if the increase in reported tax expenditure would have had a real impact (as a result of expansions of some provisions for example) we would have expected a mechanical decrease in tax revenues. Similarly, we show that states' direct spending remained unchanged during our study period. In this case, an increase in direct spending might have occurred if the government's objective was to implement an expansionary fiscal policy in the years following the introduction of the tax incentives evaluation laws.

Table 6 summarizes the reduced-form point estimates by pooling all the coefficients before and after the implementation of the incentive evaluation laws. These coefficients capture the percentage changes in the outcome variables. For Tax Expenditures (TE), there is a significant increase of 12 % (with a standard error of 0.04), indicating a robust positive effect following the implementation of incentive evaluation laws. However, for tax revenues and government spending, the changes are not statistically significant, with

coefficients of 0.00 (standard error 0.02) and -0.01 (standard error 0.02), respectively. This suggests that tax expenditures were likely misreported in the past as they do not significantly affect revenues or spending.

Taken together, the evidence suggests that TIELs induced states to report their tax expenditures more truthfully. This result strikes us as remarkable and triggers new questions such as who was benefiting from the previously undisclosed tax expenditures (i.e., who was bearing the incidence).

4.3 More evidence on voting behavior and TEs complexity

We know that tax expenditures make the tax system more complex and inefficient by introducing loopholes to the tax code (Burman et al., 2008; Krishna and Slemrod, 2003). In addition, they are highly regressive and also very costly for the public arcades, accounting for 3.4% of states' Gross Domestic Product. In this regard, revealing not reporting TEs revenues foregone may be a good setting to test the protest vote hypothesis. The disclosure of previously underreported tax expenditures could lead voters to punish the incumbent party at the elections by casting their votes against them. This punishment would occur because the transparency reveals to the general public that the government's fiscal policies, particularly those related to tax expenditures, have been disproportionately favoring the higher income earners, thereby exacerbating social and economic inequalities. Theoretically, we would expect that an increase in the actual foregone revenues due to more transparent measures may have a negative consequence for the ruling party in terms of voting share for the incumbent party. We implement the same event-study approach to test this hypothesis using as an outcome variable the incumbent vote share (%), Figure 6 shows that after the implementation of evaluation practices there was no effect on the incumbent's voting share, suggesting zero political cost for the ruling party.

We also explore whether this transparency shock in terms of newly undereported tax expenditures is accompanied by more easy-to-understand language in tax expenditure clauses. In this regard, we use a large corpus of US state statutes taken from the Regular Sessions Laws and apply text analysis and machine learning algorithms (BERT, a Large Language Models from the Transformers architecture (Vaswani et al., 2017) to identify tax expenditure-related clauses in the legislation.

Our procedure is summarised as follows. The first step was to Extract the corpus from the state "Regular Sessions" Laws and split the text into individual sentences. Later, we take the processed tax code sections from 2000-2010, (Ash et al., 2021), which removes page numbers, indexes, capitalization, punctuation table of content, footers, headers, stop

words and rare words. In the next step, we apply a dictionary method that consist on pre-defining a set of words that may refer to tax expenditures i.e: credits, exemptions, rebates, deductions, deferrals, exclusions, etc. This allows us to distinguish tax expenditure (TE) and non-TE related clauses. Once this process is done, we proceed to fine-tuning a model by using as input the labelled data to train a BERT model that can accurately identify TEs provisions. Then, we apply the fine-tuned model to extract and classify tax expenditures clauses.

Finally, in order to measure the complexity of the tax expenditure-related clauses we use a measure widely used in the linguistic literature of readability called Dale-Chall Readability Score, which take into account the number of difficult words and the total number of words a text may contain. The formula is as follows:

$$DCR = 0.1579 \times \left(\frac{\text{Difficult Words}}{\text{Total Words}} \right) \times 100 + 0.0496 \times \left(\frac{\text{Total Words}}{\text{Total Sentences}} \right)$$

Figure 6 shows the event-study with the new measure of complexity as outcome variable. As we can see, it seems that after the implementation of evaluation practices there is no effect on the difficulty of the language used in the clauses that are related to tax expenditures. This result is a bit surprising because one would expect that if legislators and lawmakers are promoting more transparent measures such as the incentive evaluation laws, we would have expected an attempt to make the provisions more understandable for people.

5 Heterogeneity by type of tax base

An important aspect of our main empirical result is to determine which tax base accounts for the observed increase in reported tax expenditures once the tax incentive evaluation laws were enacted. This can shed light on who may be bearing the burden of these hidden, previously undisclosed TEs. Figure 8 plots event-study estimates for four broad tax bases—corporate income, sales and use, personal income, and other taxes—against the relative year of treatment. A clear pattern emerges: while corporate income tax and sales-and-use tax expenditures experience significant upward revisions following the law's enactment, personal income tax and other taxes remain virtually unchanged. These findings suggest that the reported underestimation of tax expenditures before TIELs were passed was largely concentrated on corporate and sales-based incentives.

This heterogeneous pattern may be explained by the structural differences across tax bases. For instance, corporate and sales tax expenditures often involve more complex rules

and reporting requirements, making them easier to misreport or underestimate in the absence of a comprehensive and standardized evaluation framework. Businesses may benefit from a variety of targeted deductions, credits, or exemptions that go relatively unchecked until a formal evaluation process is introduced. Personal income tax expenditures, on the other hand, tend to be more standardized—with simpler eligibility requirements or automatic withholding—that leave less room for misreporting. Moreover, policymakers have historically paid closer attention to personal income tax provisions (e.g., bracket thresholds, itemized deductions), so any underestimation is less likely to be substantial. By contrast, corporate and sales tax incentives can be spread across multiple programs and levels of administration, amplifying both the opportunity and incentives for incomplete reporting.

5.1 Heterogeneity according to evaluation ratings

We use the PEW Trust categorization of states. PEW categorizes states in 3 groups based on achievements: a) Leading states, which have well-designed plans to regularly evaluate tax incentives, produce quality evaluations that measure economic impact and have taken meaningful steps to ensure transparency in TEs reporting. b) making progress states, which have enacted policies for regular evaluation of major tax incentives and have progressed towards becoming leaders, but not yet meeting all criteria; and Trailing states (untreated), which lack of well-designed plans for regular evaluation of major TEs, show limited progress in evaluating effectiveness of tax incentives and their evaluation process and informing policy choices are not well-established. The results in Figure 9 indicate those states who are making progress are the states who are driving the increase in reported tax expenditures. This is aligned with the idea that those states that were leading before the implementation of evaluation practices were doing a good job even before those laws were passed.

6 Potential mechanisms

6.1 Length of tax incentive review cycles

In order to explore potential mechanisms that may drive these results, we investigate whether the frequency with which states scrutinize and evaluate their major tax expenditures affects the level of reported (or disclosed) tax expenditures. Drawing on data from the Pew Charitable Trusts, we classify states according to their standard evaluation cycle:

those that undertake periodic revisions every two years or less ("short cycle") and those that wait more than two years ("long cycle"). Figure 10 shows that states operating on longer review cycles exhibit a larger post-treatment increase in reported tax expenditures compared to those on shorter cycles. By contrast, states that review incentives more frequently display only modest adjustments in their reported TEs following the enactment of TIELs.

A key reason behind this pattern is that a longer revision cycle naturally implies more tax expenditures pile up before being rigorously reexamined by public officials. Consequently, states that evaluate incentives infrequently uncover a substantial stock of previously misreported or overlooked items at once, causing a pronounced jump in reported TEs. In addition, extended intervals between reviews may lead to less systematic maintenance of documentation and internal oversight, simply because there are fewer immediate checks or requirements to update information. Meanwhile, states on short cycles conduct more frequent evaluations, reducing the window for inaccuracies to accumulate and resulting in a comparatively smaller correction when TIELs strengthen transparency requirements.

7 Conclusion

This study provides new evidence on the impact of tax incentive evaluation laws (TIELs) on transparency and reporting of tax expenditures (TEs) at the U.S. state level. Leveraging the staggered adoption of TIELs from 1999-2019 as an exogenous shock, we find a persistent increase in reported TEs of approximately 14% following implementation. This translates to around $2.44 billion more in disclosed foregone revenues at 2023 prices.

The observed transparency effect appears to be driven primarily by the disclosure of previously underreported or unreported TEs rather than introduction of new provisions. We find no corresponding changes in state tax revenues or direct spending that would indicate expansionary fiscal policy by the state governments. Further, the results are strongest in states classified as "making progress" based on the evaluation ratings made by PEW Charitable Trust, and those with longer state budget cycles.

We also explore potential political economy impacts in line with a "protest vote hypothesis". We do not find evidence that greater TE transparency affects incumbent voting shares negatively. This suggests negligible electoral costs to incumbents from disclosing more information on the fiscal impact of tax provisions favoring higher-income earners. Finally, text analysis shows TIEL adoption does not translate into simpler language or readability of TE clauses for taxpayers and citizens.

Finally, we unpack the aggregate outcome of tax expenditures to determine which type of tax base (e.g., corporate, personal income, sales, property taxes, etc.) drives the result and, more importantly, who ultimately bears these hidden, previously undisclosed tax expenditures (e.g., individuals, corporations, etc.). We find that the increase in reporting TEs is mainly driven by sale, use and corporate income taxes. This are taxes that usually exhibit a more complex structure with more demanding rules and reporting requirements, making them more susceptible to misreporting before the implementation of a rigorous evaluation framework.

References

Adsera, Alicia, Carles Boix, and Mark Payne, "Are you being served? Political accountability and quality of government," *Journal of Law, Economics, and organization*, 2003, *19* (2), 445–490.

Algara, Carlos and Sharif Amlani, "Replication Data for: Partisanship Nationalization in American Elections: Evidence from Presidential, Senatorial, Gubernatorial Elections in the U.S. Counties, 1872-2020," 2021.

Ash, Elliott, Malka Guillot, and Luyang Han, "Machine extraction of tax laws from legislative texts," in "Proceedings of the Natural Legal Language Processing Workshop 2021" Association for Computational Linguistics 2021, pp. 76–85.

Bastian, Jacob, "The rise of working mothers and the 1975 earned income tax credit," *American Economic Journal: Economic Policy*, 2020, *12* (3), 44–75.

_ **and Katherine Michelmore**, "The long-term impact of the earned income tax credit on children's education and employment outcomes," *Journal of Labor Economics*, 2018, *36* (4), 1127–1163.

Benito, Bernardino and Francisco Bastida, "Budget transparency, fiscal performance, and political turnout: An international approach," *Public Administration Review*, 2009, *69* (3), 403–417.

Bhargava, Saurabh and Dayanand Manoli, "Psychological frictions and the incomplete take-up of social benefits: Evidence from an IRS field experiment," *American Economic Review*, 2015, *105* (11), 3489–3529.

Borusyak, Kirill, Xavier Jaravel, and Jann Spiess, "Revisiting event study designs: Robust and efficient estimation," *arXiv preprint arXiv:2108.12419*, 2021.

Burman, Leonard E and Marvin Phaup, "Tax expenditures, the size and efficiency of government, and implications for budget reform," *Tax Policy and the Economy*, 2012, *26* (1), 93–124.

_ , Christopher Geissler, and Eric J Toder, "How big are total individual income tax expenditures, and who benefits from them?," *American Economic Review*, 2008, *98* (2), 79–83.

Callaway, Brantly and Pedro HC Sant'Anna, "Difference-in-differences with multiple time periods," *Journal of econometrics*, 2021, *225* (2), 200–230.

Cameron, A Colin, Jonah B Gelbach, and Douglas L Miller, "Robust inference with multiway clustering," *Journal of Business & Economic Statistics*, 2011, *29* (2), 238–249.

Carlino, Gerald, Thorsten Drautzburg, Robert Inman, and Nicholas Zarra, "Partisanship and fiscal policy in economic unions: Evidence from us states," *American Economic Review*, 2023, *113* (3), 701–737.

Chaisemartin, Clément De and Xavier d'Haultfoeuille, "Two-way fixed effects and differences-in-differences with heterogeneous treatment effects: A survey," *The Econometrics Journal*, 2023, *26* (3), C1–C30.

Chetty, Raj, Adam Looney, and Kory Kroft, "Salience and taxation: Theory and evidence," *American economic review*, 2009, *99* (4), 1145–1177.

_ and Emmanuel Saez, "Teaching the tax code: Earnings responses to an experiment with EITC recipients," *American Economic Journal: Applied Economics*, 2013, *5* (1), 1–31.

_ , Nathaniel Hendren, Patrick Kline, and Emmanuel Saez, "The economic impacts of tax expenditures: Evidence from spatial variation across the US," *SOI Whitepaper*, 2013.

Dechezleprêtre, Antoine, Elias Einiö, Ralf Martin, Kieu-Trang Nguyen, and John Van Reenen, "Do tax incentives increase firm innovation? An RD Design for R&D," Technical Report, American Economic Journal: Economic Policy (Forthcoming) 2023.

Eissa, Nada and Jeffrey B Liebman, "Labor supply response to the earned income tax credit," *The quarterly journal of economics*, 1996, *111* (2), 605–637.

Finkelstein, Amy, "E-ztax: Tax salience and tax rates," *The Quarterly Journal of Economics*, 2009, *124* (3), 969–1010.

Goldin, Jacob, "Optimal tax salience," *Journal of Public Economics*, 2015, *131*, 115–123.

Goodman-Bacon, Andrew, "Difference-in-differences with variation in treatment timing," *Journal of econometrics*, 2021, *225* (2), 254–277.

Gruber, Jonathan, Amalie Jensen, and Henrik Kleven, "Do people respond to the mortgage interest deduction? Quasi-experimental evidence from Denmark," *American Economic Journal: Economic Policy*, 2021, *13* (2), 273–303.

Howard, Christopher, *The hidden welfare state: Tax expenditures and social policy in the United States*, Vol. 171, Princeton University Press, 1999.

Jensen, Nathan M and Edmund J Malesky, *Incentives to pander: How politicians use corporate welfare for political gain*, Cambridge University Press, 2018.

Jones, Damon, "Information, preferences, and public benefit participation: Experimental evidence from the advance EITC and 401 (k) savings," *American Economic Journal: Applied Economics*, 2010, *2* (2), 147–163.

Krishna, Aradhna and Joel Slemrod, "Behavioral public finance: tax design as price presentation," *International Tax and Public Finance*, 2003, *10*, 189–203.

Nallareddy, Suresh, Ethan Rouen, and Juan Carlos Suárez Serrato, "Do corporate tax cuts increase income inequality?," *Tax Policy and the Economy*, 2022, *36* (1), 35–91.

Poterba, James M, "Introduction: Economic analysis of tax expenditures," *National Tax Journal*, 2011, *64* (2), 451–457.

Saez, Emmanuel, "The optimal treatment of tax expenditures," *Journal of Public Economics*, 2004, *88* (12), 2657–2684.

Slattery, Cailin and Owen Zidar, "Evaluating state and local business incentives," *Journal of Economic Perspectives*, 2020, *34* (2), 90–118.

Thrall, Calvin and Nathan M Jensen, "Does Transparency Improve Public Policy? Evidence from a Tax Incentive Transparency Initiative," Technical Report, Working Paper 2022.

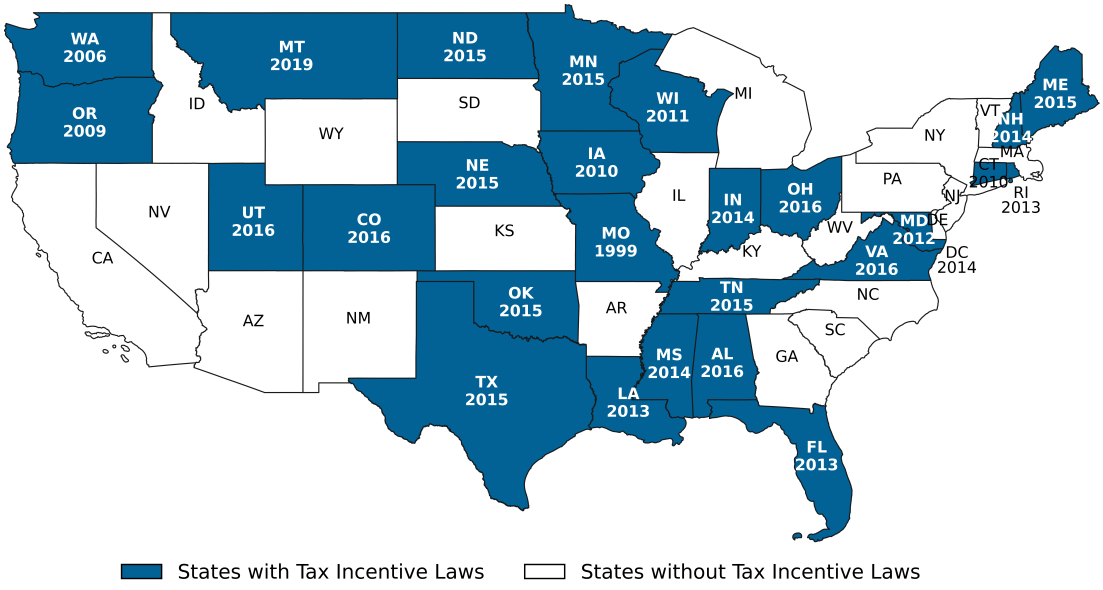
Trusts, Pew Charitable, "How states are improving tax incentives for jobs and growth: A national assessment of evaluation practices," *Washington, DC: Pew Charitable Trusts. http://www. pewtrusts. org/-/media/assets/2017/05/edti_how_states_are_improving_tax_incentives_for_jobs_and_growth. pdf*, 2017, *2100*.

Vaswani, Ashish, Noam Shazeer, Niki Parmar, Jakob Uszkoreit, Llion Jones, Aidan N Gomez, Łukasz Kaiser, and Illia Polosukhin, "Attention is all you need," *Advances in neural information processing systems*, 2017, *30*.

Wilson, Daniel J, "Beggar thy neighbor? The in-state, out-of-state, and aggregate effects of R&D tax credits," *The Review of Economics and Statistics*, 2009, *91* (2), 431–436.

Figures and Tables

Figure 1: The spread of tax incentive evaluation laws. Passed by 28 states + DC



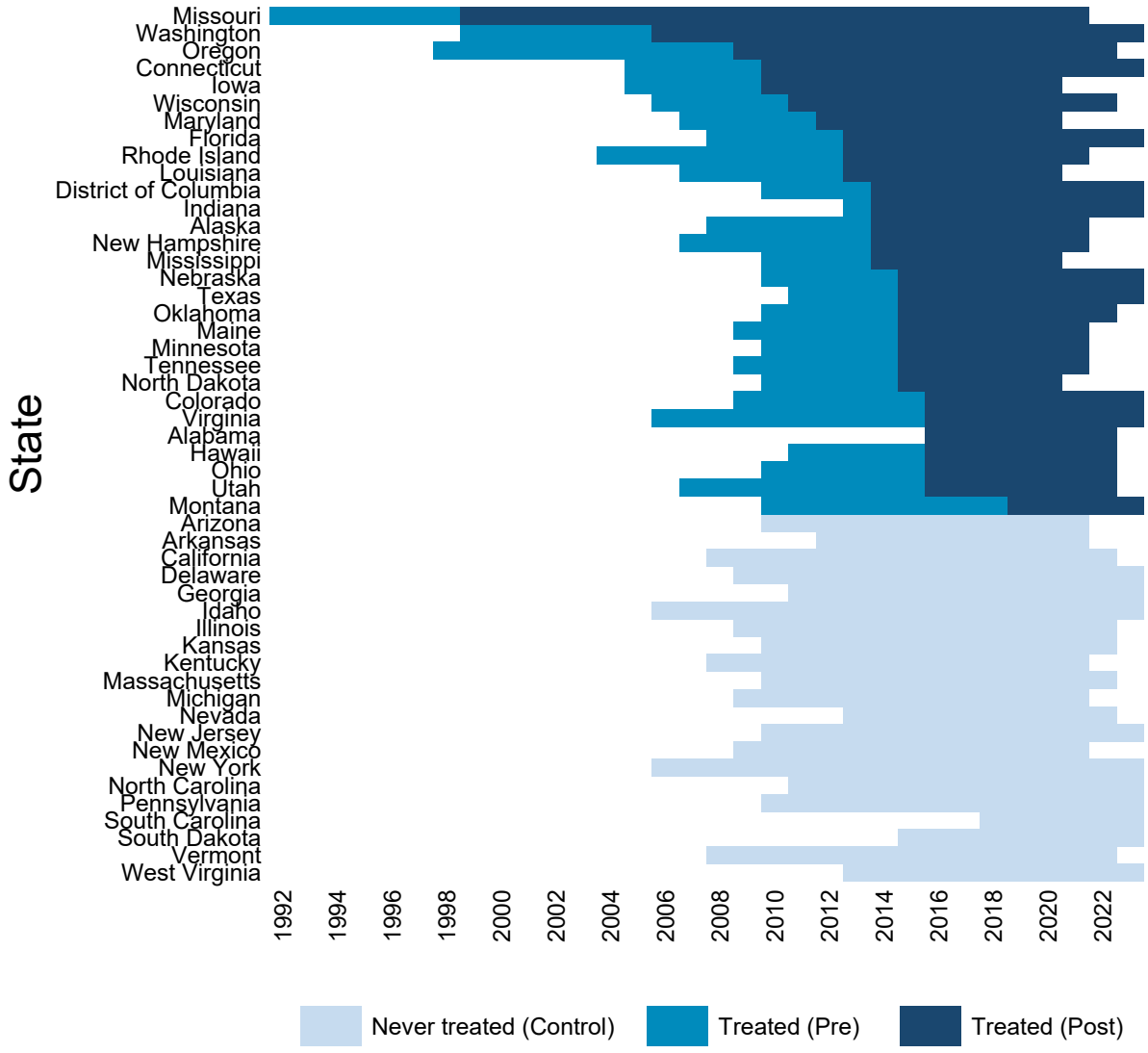
Source: authors' compilation based on PEW Trusts (2017).

Table 1: Number of states by treatment year

Treatment Year	State name	# States	Percentage of States	Cumulative
1999	MO	1	2.00%	2.00%
2006	WA	1	2.00%	4.00%
2009	OR	1	2.00%	6.00%
2010	CT, IA	2	4.00%	10.00%
2011	WI	1	2.00%	12.00%
2012	MD	1	2.00%	14.00%
2013	FL, LA, RI	3	6.00%	20.00%
2014	AK, DC, IN, MS, NH	5	10.00%	30.00%
2015	ME, MN, NE, ND, OK, TN, TX	7	14.00%	44.00%
2016	AL, CO, HI, OH, UT, VA	6	12.00%	56.00%
2019	MT	1	2.00%	58.00%
Never treated	AZ, AR, CA, DE, GA, ID, IL, KS, KY, MA, MI, NV, NJ, NM, NY, NC, PA, SC, SD, VT, WV	21	42.00%	100.00%
Total		**50**	**100.00%**	

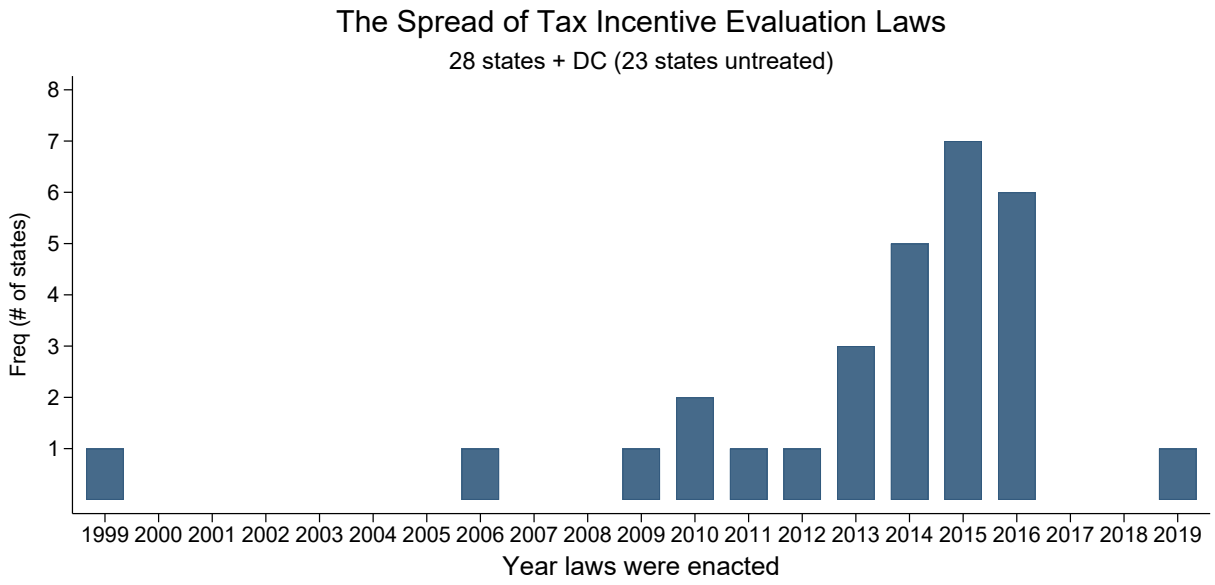
Notes: This table presents the number of states by treatment year. The "Treatment Year" column indicates the year of treatment introduction, while the "State name" column lists the abbreviations of the states. The "# States" column provides the count of states in each group, and the "Percentage of States" and "Cumulative Percentage" columns display the share of states treated in each year and the cumulative percentage of treated states, respectively. The "Never treated" row includes states that did not adopt the TIELS.

Figure 2: Data availability and treatment status by timing group



Source: authors' compilation based on PEW Trusts (2017).

Figure 3: Variation of tax incentive evaluation laws



Source: authors' compilation based on PEW Trusts (2017).

Table 2: Summary statistics of main variables at period $t-1$ (Base year=2023)

Variables	N (1)	Mean (2)	SD (3)	Min (4)	Max (5)
Tax Expenditures	50	17,430.39	20,715.98	37.53	90,423.33
# TE provisions	40	246.85	118.61	74.00	527.00
Tax Revenues	50	24,462.29	34,541.16	2,312.26	223,595.55
Total Spending	50	75,277.89	103,138.57	8,622.64	624,054.69
Complexity score	41	11.81	0.96	10.34	14.93
Incumbent vote share (%)	47	0.53	0.08	0.34	0.65

Notes: this table shows the summary statistics for the main variables. First, column (1) shows the number of states in our sample. Columns (2) and (3) denote the mean and standard deviation, respectively, while Columns (4) and (5) report the minimum and maximum values during the period just before the introduction of TIEL. Tax expenditures, tax revenues and total spending are reported in millions of USD. Complexity score reflects how complex is the language used fot tax expenditures clauses in the tax legislation.
Source: authors' calculations using data from tax expenditures reports.

Table 3: Relevance of Tax Expenditures in U.S. states

Tax Type	**Amount (t-1)** (1)	**Share (%)** (2)	**Amount (t+4)** (3)	**Difference USD mill** (4)	**Growth (%)** (5)	**# States** (6)
Sales, Use, and Excise Tax	8,194.07	50.21	9,156.04	961.97	11.74	25
Personal Income Tax	4,378.97	26.83	4,523.03	144.06	3.29	24
Property Tax	2,951.26	18.08	3,727.14	775.87	26.29	13
Corporate Income Tax	694.75	4.26	842.61	147.86	21.28	27
Inheritance, Estate, & Gift Tax	67.46	0.41	88.79	21.34	31.63	14
Environmental & Misc. Fees	33.64	0.21	35.69	2.05	6.09	10
Total	16,320.15	100.00	18,373.30	2,053.15	12.58	28

Notes: All monetary figures are presented in constant millions of USD from 2023. Figures correspond to the average value of tax expenditures across treated states by type of tax. Column (1) corresponds to the period before the Tax Incentive Evaluation Laws (TIELs) were implemented, while the "Amount (t+4)" column represents the values four years after the implementation of TIELs. The "Difference" column shows the change in USD from t-1 to t+4, and "Growth" indicates the percentage increase over this period. The "#" column denotes the number of states associated with each tax type. *Source:* Authors' compilation based on state tax expenditure records.

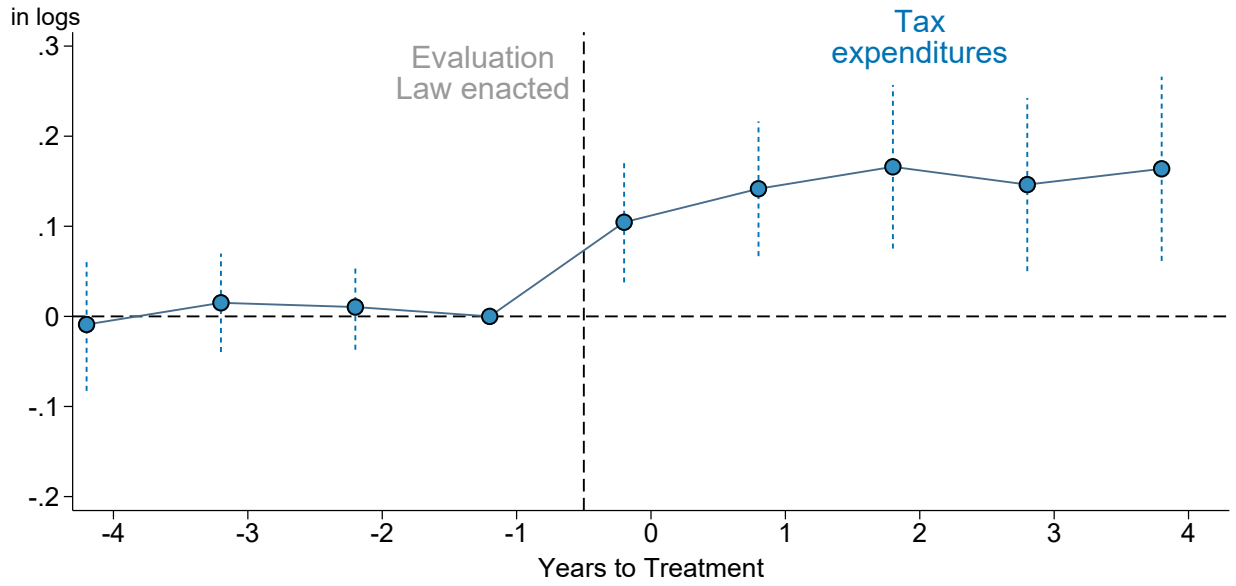
Table 4: Ratio TE/Tax Revenues

		Year 1			Year T		
Category	**N**	**Tax Expenditures** (1)	**Tax Revenues** (2)	**Ratio (%)** (3)	**Tax Expenditures** (4)	**Tax Revenues** (5)	**Ratio (%)** (6)
		Panel A: Treated vs Never treated states					
All states	50	779,472	1,049,061	74.3%	957,264	1,507,236	63.5%
Treated states	29	425,540	462,961	91.9%	538,499	623,870	86.3%
Never treated	21	353,932	586,101	60.4%	418,765	883,367	47.4%
		Panel B: unpacking by tax bases					
Sales & Use Tax	46	367,242	487,428	75.3%	426,532	635,474	67.1%
Corporate Income Tax	44	67,739	59,865	113.2%	64,606	109,329	59.1%
Personal Income Tax	43	227,805	341,097	66.8%	286,331	575,670	49.7%
Other Taxes	34	116,060	123,620	93.9%	152,903	149,252	102.4%

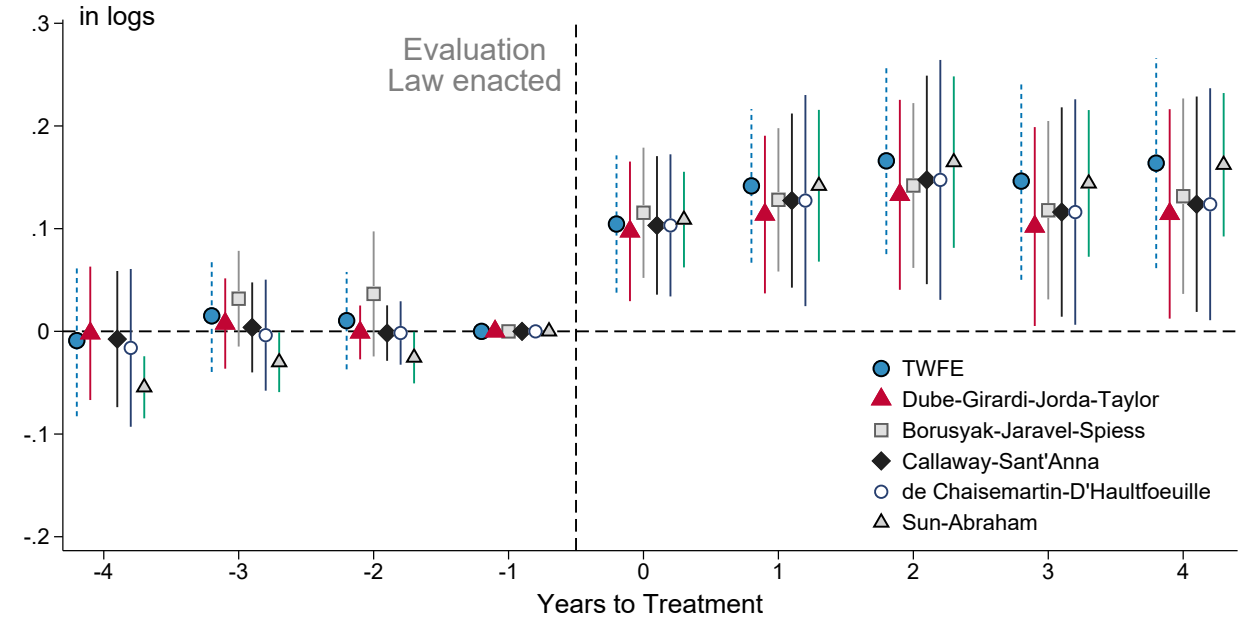
Notes: All monetary figures are presented in constant millions of USD from 2023. Figures correspond to the total value of tax expenditures and tax revenues across treated and never treated states and by type of tax base. Columns (1) to (3) correspond to the first period data is available for each state, while columns (4) to (6) correspond to the values in the last year after the implementation of TIELs. The "Ratio" (%) columns indicate the percentage of total tax revenues that tax expenditures represent in each period (Year 1 or Year T). *Source:* Authors' compilation based on state tax expenditure records.

Figure 4: Preliminary evidence on tax expenditures and recent diff-in-diff literature

(a) TWFE OLS estimation

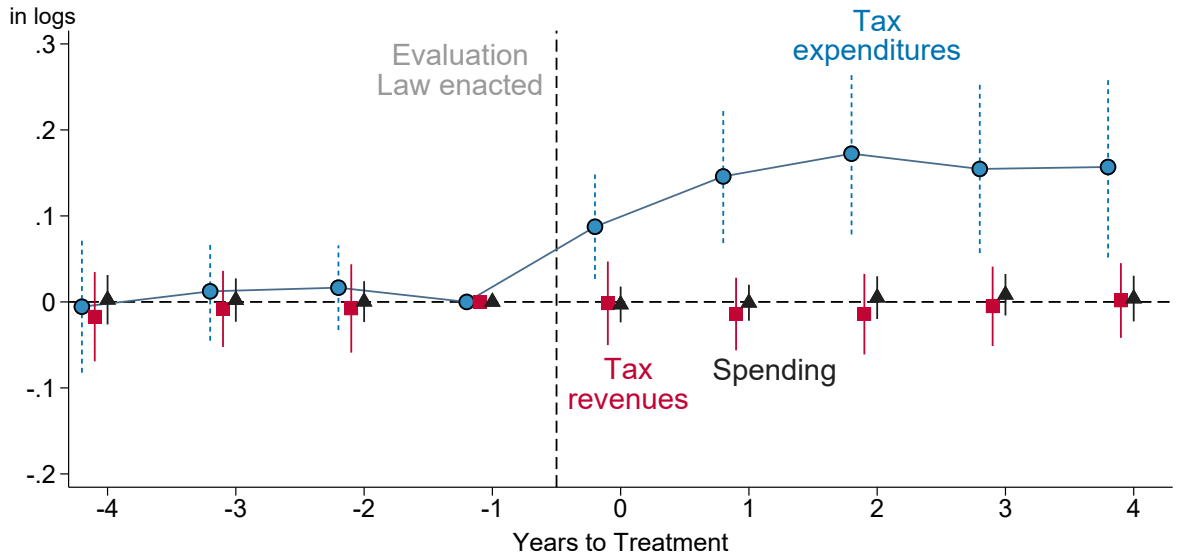


(b) Different estimators



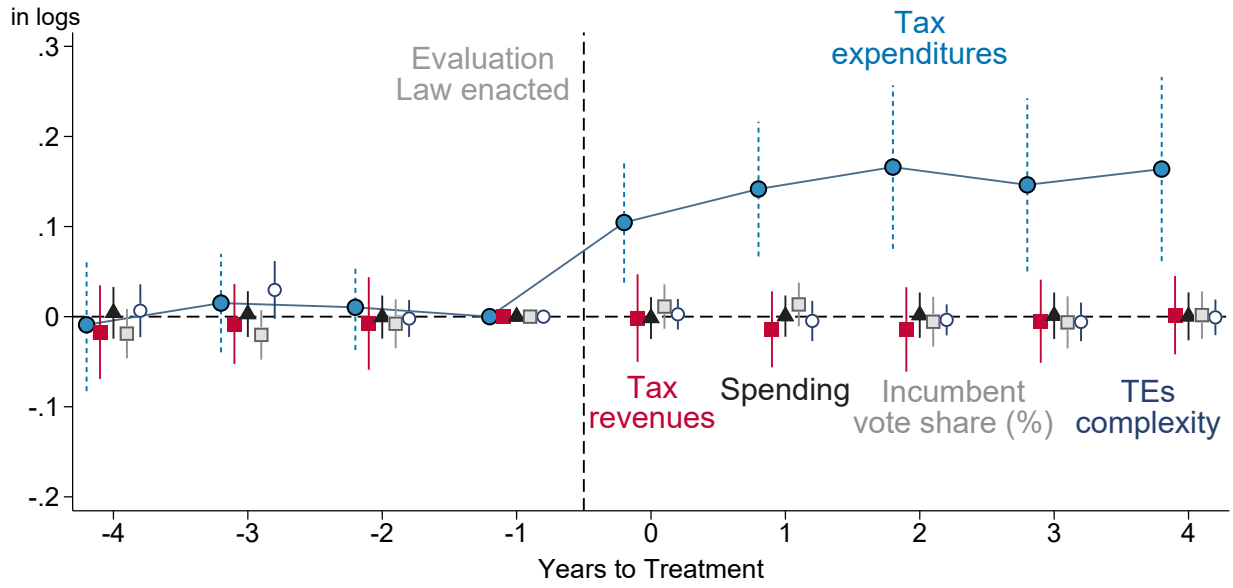
Notes: These figures plot the event-study estimates of parameter β_k and its corresponding 95-percent confidence intervals of equation (1). Panel (a) shows the TWFE OLS estimation. The dependent variable is tax expenditures (in logs). It shows that after the introduction of incentive evaluation laws tax expenditures reported increase by 10%. In panel (b) we report different estimators from the new advances in the diff-in-diff literature. The results are in line with our main specification. *Source:* authors' compilation based on TEs reports, State Tax Revenues Departments and State Legislatures.

Figure 5: Event-study on tax revenues and total government spending



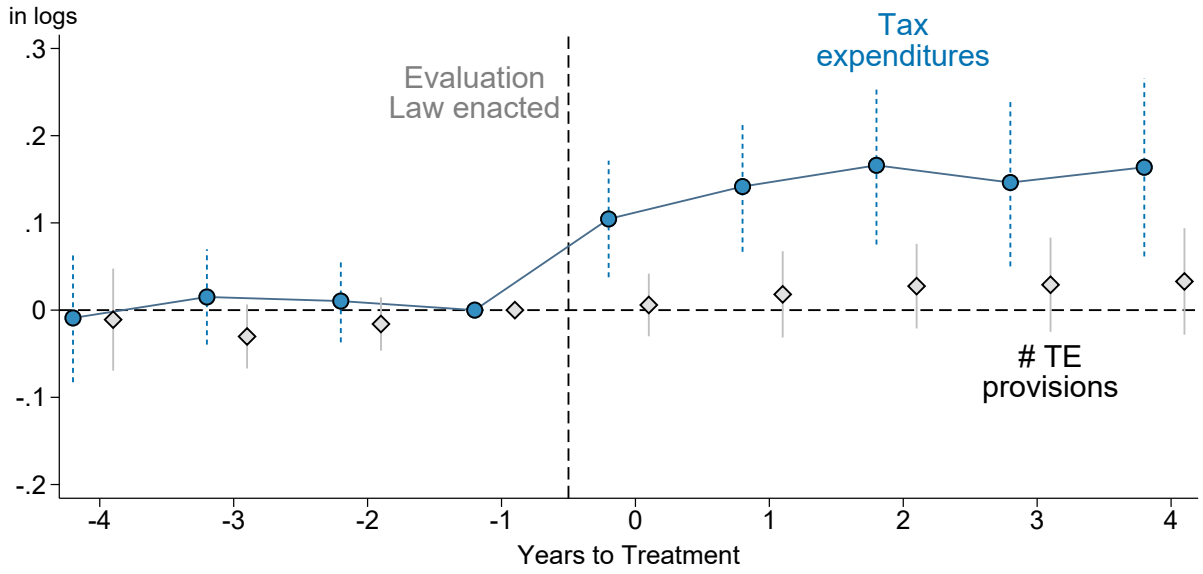
Notes: These figures plot the event-study estimates of parameter β_k and its corresponding 95-percent confidence intervals of equation (1). The dependent variables are tax expenditures, tax revenues and total government spending (in logs). It shows that after the introduction of incentive evaluation laws tax expenditures reported increase by 10%. However, tax revenues and total government spending remain unchanged. *Source:* authors' compilation based on TEs reports, State Tax Revenues Departments and State Legislatures.

Figure 6: Event-study on Incumbent vote share (%) and tax expenditure complexity



Notes: These figures plot the event-study estimates of parameter β_k and its corresponding 95-percent confidence intervals of equation (1). The dependent variables are tax expenditures, tax revenues and total government spending (in logs). It shows that after the introduction of incentive evaluation laws tax expenditures reported increase by 10%. However, incumbent vote share and TEs complexity remain unchanged.

Figure 7: Event-study on number of TE provisions



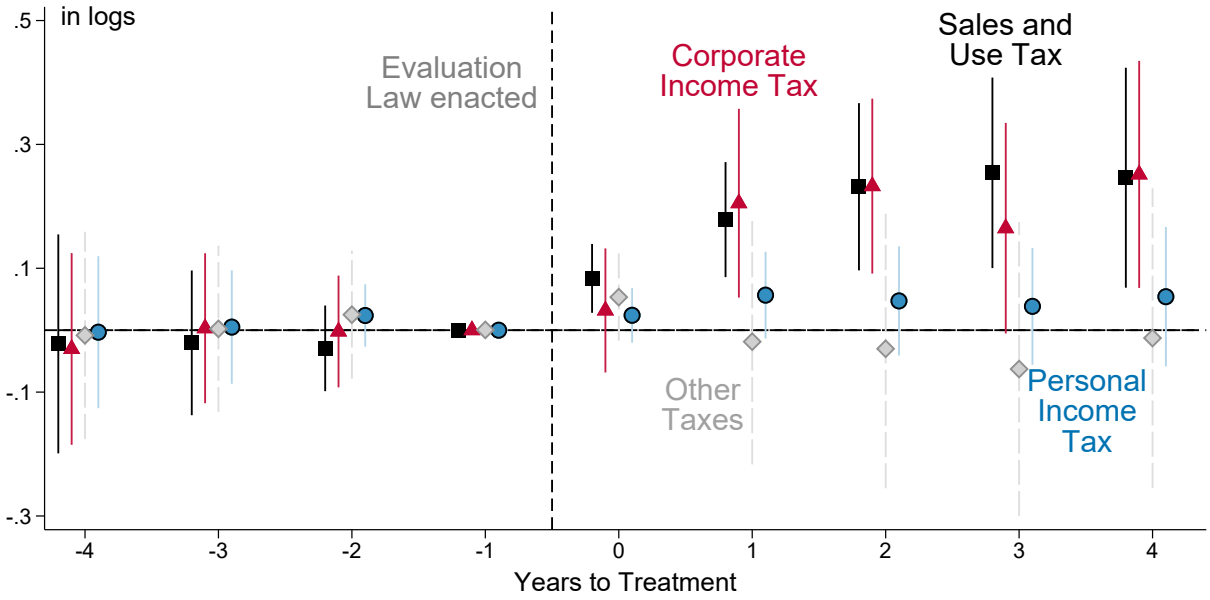
Source: authors' compilation based on Tax Expenditure PDF reports.

Table 5: Reduced form results, impact of TIEL on a set of outcome variables

	Reported TEs (1)	# TE Provisions (2)	Tax Revenues (3)	Total Spending (4)	Vote Share (%) (5)	TE Complexity (6)
Reduced Form						
Percentage change	0.14***	0.03	0.00	-0.00	0.01	-0.01
	(0.04)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)
R-squared	0.99	0.98	0.99	1.00	0.78	0.83
# of Observations	715	567	670	607	660	591
# of States	50	50	50	50	50	50
State FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Average in levels at t-1	17,397.54	246.85	24,444.42	75,278.06	0.53	11.81

Notes: this table reports the reduced form estimates from the event-study. Tax expenditures, tax revenues and total spending are reported in logs and the average in levels at t-1 of these variables in millions of USD. Complexity score reflects how complex is the language used for tax expenditures clauses in the tax legislation and the vote share (%) represents how popular is the incumbent party before the introduction of the tax incentive evaluation laws (TIELs). Standard errors clustered at the firm level are reported in parentheses. *** significant at 1%, ** significant at 5%; * significant at 10%.
Source: authors' calculations using data from tax expenditures reports.

Figure 8: Event-study on reported TEs unpacked by tax bases



Source: authors' compilation based on Tax Expenditure PDF reports.

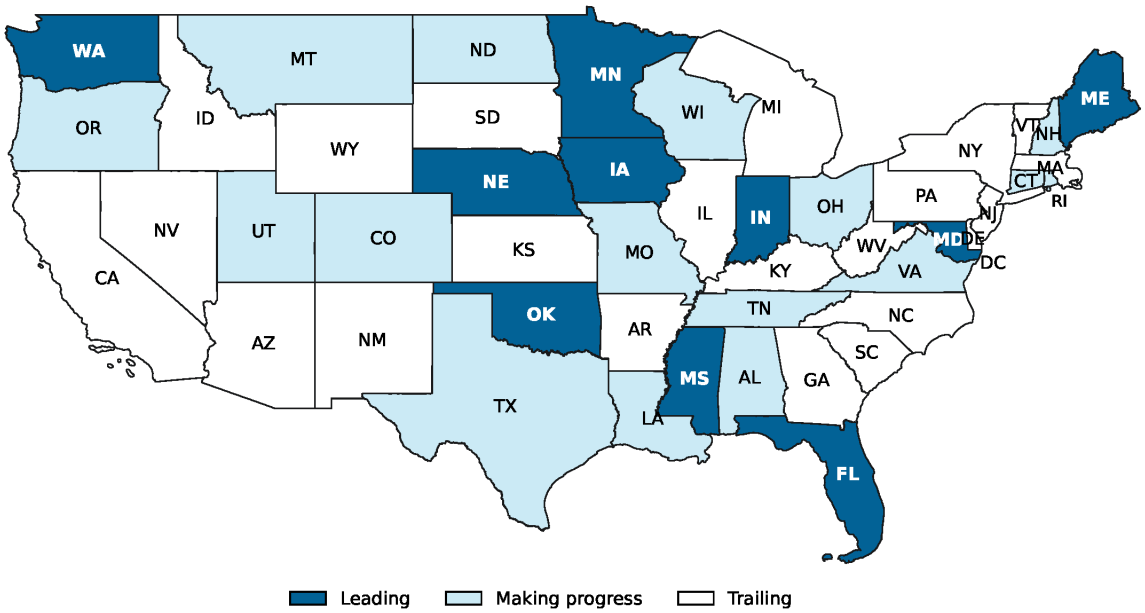
Table 6: Reduced form results, impact of TIEL: unpacked by tax bases

	Personal Income Taxes (1)	Sales and Use Taxes (2)	Corporate Income Taxes (3)	Other Taxes (4)
Reduced Form				
Percentage change	0.04	0.21***	0.15**	-0.04
	(0.04)	(0.06)	(0.07)	(0.26)
R-squared	0.99	0.99	0.97	0.94
# of Observations	619	663	657	487
# of States	50	50	50	50
State FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Average in levels at t-1	5,554.34	8,264.34	1,321.62	2,250.85

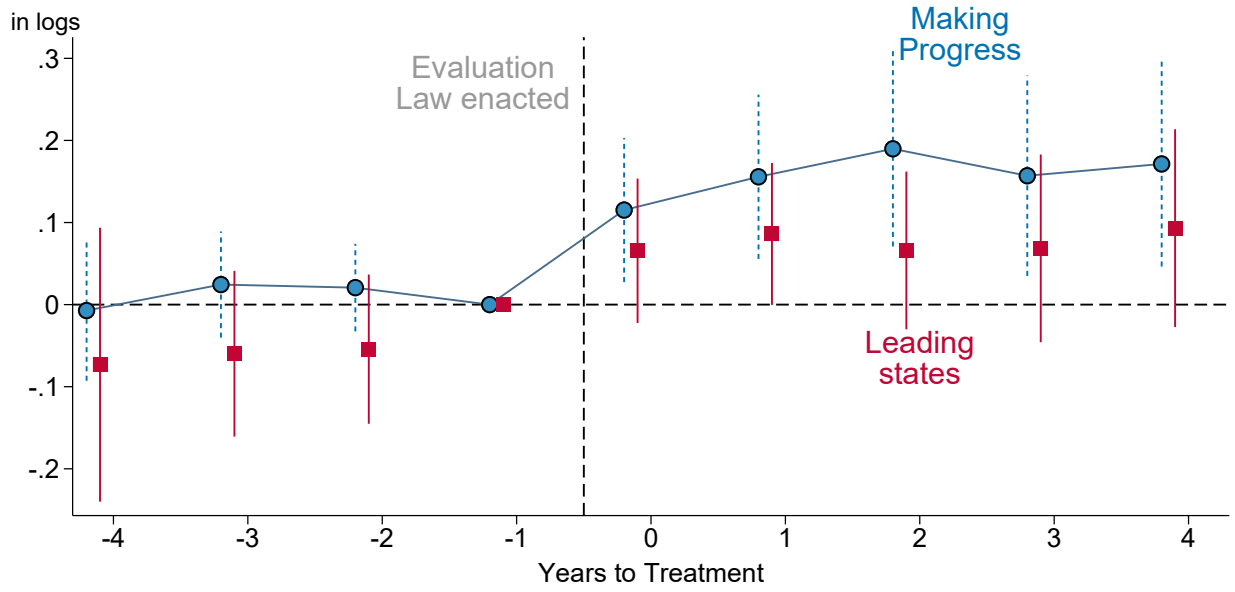
Notes: This table reports the reduced form estimates from the event-study. Personal Income, Sales and Use, Corporate and Other Tax Expenditures are in logs (average in levels at $t-1$ reported in millions of USD). Standard errors clustered at the firm level are in parentheses. *** significant at 1%, ** significant at 5%, * significant at 10%.
Source: Authors' calculations using data from tax expenditures reports.

Figure 9: Progress in tax incentive evaluation ratings

(a) U.S map: rating status of states

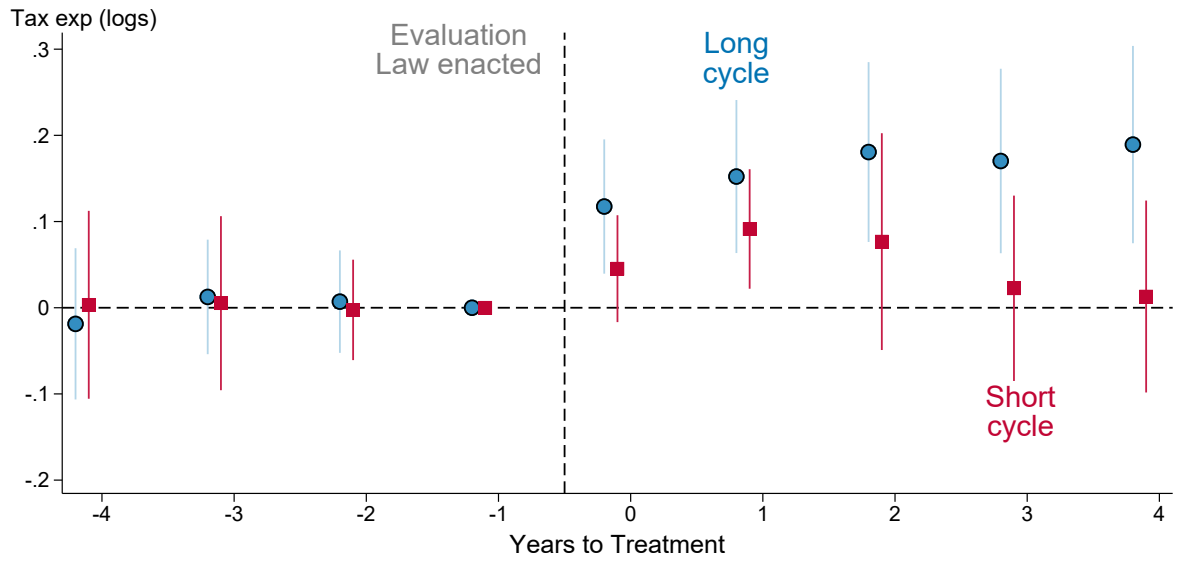


(b) Event-study on progress in tax incentive evaluation ratings



Notes: These figures show the progress in tax incentive evaluation ratings.idence intervals of equation (1). Panel (a) shows the U.S map with leading, making progress and untreated states. In panel (b) we report the event study. *Source:* authors' compilation based on TEs reports, State Tax Revenues Departments, State Legislatures, and PEW Trust.

Figure 10: Event-study on evaluation cycle lengths



Notes: These figures plot the event-study estimates of parameter β_k and its corresponding 95-percent confidence intervals of equation (1). *Source:* authors' compilation.

Table 7: Reduced form results, impact of TIEL on a set of outcome variables

	Long cycle (1)	Short cycle (2)
Reduced Form		
Percentage change	0.16***	0.05
	(0.04)	(0.05)
R-squared	0.99	0.98
# of Observations	645	348
# of States	50	50
State FE	✓	✓
Year FE	✓	✓

Notes: This table reports the reduced form estimates from the event-study. Tax expenditures are in logs (average in levels at $t-1$ reported in millions of USD). Standard errors clustered at the firm level are in parentheses. *** significant at 1%, ** significant at 5%, * significant at 10%.
Source: Authors' calculations using data from tax expenditures reports.

ONLINE APPENDIX

Appendix A Additional Tables

Figure A.1: Examples of Tax Expenditure Reports

General Fund Sales & Use Tax Expenditures	36 MRSA §	FY'14	FY'15	FY'16	FY'17
Sales to the State & Political Subdivisions	1760.2	$172,596,735	$180,984,614	$167,822,096	$171,178,538
Grocery Staples	1760.3	$164,500,195	$175,204,700	$164,901,000	$171,152,000
Ships Stores	1760.4	C	C	C	C
Prescription Drugs	1760.5	$66,715,538	$71,039,100	$66,851,500	$69,369,000
Prosthetic Devices	1760.5A	$6,963,025	$7,429,950	$7,011,000	$7,286,500
Meals Served by Public or Private Schools	1760.6A	$8,723,705	$9,289,319	$8,741,330	$9,071,170
Meals Served to Patients in Hospitals & Nursing Homes	1760.6B	$8,314,970	$8,903,400	$8,502,500	$8,987,000
Providing Meals for the Elderly	1760.6C	$363,300	$384,690	$356,212	$366,899
Providing Meals to Residents of Certain Nonprofit Congregate Housing Facilities	1760.6D	A	A	A	A
Certain Meals Served by Colleges to Employees of the College	1760.6E	A	A	A	A
Meals Served by Youth Camps that are Licensed by DHHS	1760.6F	C	C	C	C
Meals Served by a Retirement Facility to its Residents	1760.6G	$610,917	$646,886	$605,721	$623,893
Products Used in Agricultural and Aquacultural Production & Bait	1760.7A-C	$3,242,635	$3,438,050	$3,249,000	$3,372,500
Certain Jet Fuel	1760.8B	$5,491,759	$5,815,106	$5,445,054	$5,608,406
Coal, Oil & Wood for Cooking & Heating Homes	1760.9	$70,308,357	$73,933,750	$69,654,000	$73,207,000
Fuel Oil for Burning Blueberry Land	1760.9A	A	A	A	A
First 750 KW Hours of Residential Electricity Per Month	1760.9B	$23,122,834	$25,129,533	$24,173,700	$25,784,045
Gas When Used for Cooking & Heating in Residences	1760.9C	$13,232,289	$14,441,900	$14,478,000	$15,318,750
Fuel and Electricity Used in Manufacturing	1760.9D	$28,206,151	$29,430,773	$27,836,160	$28,392,883
Fuel Oil or Coal which become an Ingredient or Component Part	1760.9G	A	A	A	A
Certain Returnable Containers	1760.12	$1,427,979	$1,512,056	$1,415,834	$1,458,310
Packaging Materials	1760.12A	$11,943,875	$12,843,050	$12,264,500	$12,720,500
Publications Sold on Short Intervals	1760.14	$1,610,250	$0	$0	$0
Free Publications and Components of Publications	1760.14-A	$1,234,335	$1,797,609	$1,689,753	$1,747,204
Sales to Hospitals, Research Centers, Churches and Schools	1760.16	F	F	F	F
Rental Charges for Living Quarters in Nursing Homes and Hospitals	1760.18	C	C	C	C
Sales to Certain Nonprofit Residential Child Care Institutions	1760.18A	B	B	B	B
Rental of Living Quarters at Schools	1760.19	$6,573,050	$7,078,858	$6,412,500	$6,650,000
Rental Charges on Continuous Residence for More Than 28 Days	1760.20	$836,000	$894,628	$806,284	$830,473
Automobiles Used in Driver Education Programs	1760.21	A	A	A	A
Certain Loaner Vehicles	1760.21A	$253,816	$266,151	$246,795	$251,730
Automobiles Sold to Amputee Veterans	1760.22	A	A	A	A
Certain Vehicles Purchased or Leased by Nonresidents	1760.23C	C	C	C	C
Certain Vehicles Purchased or Leased by Qualifying Resident Businesses	1760.23D	$941,234	$986,977	$915,197	$933,500
Funeral Services	1760.24	$4,808,045	$5,120,500	$4,816,500	$4,997,000
Watercraft Purchased by Nonresidents	1760.25	C	C	C	C
Sales to Ambulance Services & Fire Departments	1760.26	C	C	C	C
Sales to Comm. Mental Health, Substance Abuse & Mental Retardation Facilities	1760.28	B	B	B	B
Water Pollution Control Facilities	1760.29	C	C	C	C
Air Pollution Control Facilities	1760.30	C	C	C	C
Machinery & Equipment	1760.31	$47,328,240	$51,288,600	$49,077,000	$51,604,000
New Machinery for Experimental Research	1760.32	B	B	B	B
Diabetic Supplies	1760.33	$1,185,614	$1,255,421	$1,175,531	$1,210,797
Sales Through Coin Operated Vending Machines	1760.34	$312,609	$327,801	$303,961	$310,040
Goods & Services for Seeing Eye Dogs	1760.35	A	A	A	A
Sales to Regional Planning Agencies	1760.37	A	A	A	A
Water Used in Private Residences	1760.39	$20,919,570	$22,279,400	$20,966,500	$21,755,000
Mobile & Modular Homes	1760.40	$27,593,065	$28,650,370	$26,436,477	$26,833,025

Source: authors' compilation based on TEs reports.

Figure A.2: Examples of Tax Expenditure Reports

TAX EXPENDITURE SUMMARY LIST

		Year Enacted	Fiscal Year Impact 2010	2011	2012	2013
INDIVIDUAL INCOME TAX						
Federal Exclusions						
1.01	Employer-Provided Meals and Lodging	1933	$6,800,000	$7,100,000	$7,500,000	$7,900,000
1.02	Housing Allowances for Ministers	1945	5,200,000	5,600,000	5,900,000	6,200,000
1.03	Employer-Provided Dependent Care	1982	10,500,000	10,600,000	11,000,000	11,500,000
1.04	Employee Awards	1987	1,400,000	1,400,000	1,400,000	1,400,000
1.05	Employer Pension Plans	1933	545,200,000	616,400,000	669,800,000	731,600,000
1.06	Contributions by Employers for Medical Insurance Premiums and Medical Care	1933	917,600,000	986,000,000	1,044,400,000	1,110,700,000
1.07	Employer-Paid Accident and Disability Premiums	1955	21,400,000	22,100,000	23,500,000	24,900,000
1.08	Employer-Paid Group Term Life Insurance Premiums	1933	19,200,000	19,300,000	19,400,000	19,500,000
1.09	Employer-Paid Transportation Benefits	1985	29,200,000	30,600,000	31,900,000	33,900,000
1.10	Cafeteria Plans	1975	262,300,000	287,200,000	319,300,000	327,100,000
1.11	Employer-Provided Adoption Assistance	1997	200,000	100,000	*	*
1.12	Employer-Provided Education Assistance	1979	5,700,000	300,000	0	0
1.13	Miscellaneous Employee Fringe Benefits	1985	45,600,000	47,000,000	48,800,000	52,100,000
1.14	Income Earned Abroad by U.S. Citizens and Foreign Housing Costs	1933	29,100,000	30,200,000	31,900,000	33,600,000

Source: authors' compilation based on TEs reports.