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Rewarding Nominal Growth: Unintended Impacts of Tax Cuts in Iran*

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Abstract

We study a policy in Iran that grants tax cuts to firms experiencing growth above a specified threshold. Using the universe of Iranian corporate tax returns from 2013 to 2022, we employ the bunching method and find that firms increase their reported taxable income growth by 1.17 percentage points for every 1 percentage point reduction in the corporate tax rate. Additionally, event-study results show that this growth corresponds with a reduction in the share of reported exemptions by firms. Evidence suggests that the increase in reported growth is driven by over-reporting of income and inter-temporal income shifting to maximize tax reductions. We also find coordinated bunching among firms with ownership links, implying that information about tax incentives spreads through business networks.

*This is an early draft of ongoing research, and certain sections are not yet fully developed.

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1 Introduction

Taxation presents a critical challenge for governments in developing economies, where widespread tax evasion weakens revenue collection and tax-induced distortions hinder economic growth. Balancing the trade-offs between minimizing evasion to collect tax revenue and preserving incentives for economic expansion is thus a central concern in tax policy design. In response, many developing countries employ tax cuts and exemptions to stimulate production and promote growth.

Extensive research has examined how tax rates influence reported taxable income (Bachas and Soto, 2021; Devereux et al., 2014; Serrato and Zidar, 2018). However, the underlying mechanisms driving firm-level responses remain poorly understood. One key question is whether firms achieve real economic growth in response to tax reductions, or whether they simply adjust their reporting behavior by reducing tax evasion. This paper addresses these gaps by leveraging a quasi-experimental setting in Iran to examine firms' behavioral responses to corporate tax incentives.

This study investigates an Iranian tax policy designed to incentivize firms to report higher taxable income while reducing tax evasion. Under this policy, firms receive a 1 percentage point reduction in the corporate tax rate for every 10 percentage point increase in taxable income compared to the previous year, capped at a maximum reduction of 5 percentage points. This policy strongly incentivizes firms to overstate their income growth to maximize post-tax profits. The high-inflation environment in Iran, with annual rates fluctuating between 9.0 and 45.8 percent over the past decade, further amplifies the impact of these growth thresholds on firms' reporting behavior, as nominal income growth can appear substantial even when real economic expansion is minimal.

To examine the behavioral effects of this policy, we use the universe of annual corporate tax returns spanning 2013 to 2022. This dataset provides detailed information on taxable income and tax liabilities, enabling us to track firms' reporting patterns over time. We complement this with quarterly value-added tax (VAT) returns filed by the same firms,

which serve as an independent source for identifying potential over-reporting behavior. The separate auditing processes for corporate tax and VAT returns allow us to use VAT data as a benchmark for assessing inconsistencies. Additionally, our dataset includes auditing records that capture the tax liabilities identified by auditors, providing further insights into discrepancies between reported and actual taxable incomes.

Using these datasets, we analyze firms' behavioral responses to the tax incentives and identify significant bunching around the growth thresholds. Firms strategically adjust their reported income to qualify for tax reductions, primarily by decreasing exemptions and increasing the taxable portion of their profits. Importantly, these effects persist over time, as firms continue to report elevated taxable incomes in subsequent years. This persistent behavior highlights the broader implications of the policy, particularly its role in shaping long-term reporting strategies and compliance outcomes.

This paper presents five key findings. First, it documents firms' responses to tax incentives in Iran, a context not previously studied in the literature. By analyzing the distribution of taxable income growth, we show how the policy reshaped this distribution. Second, we find that firms specifically target the growth threshold corresponding to the maximum tax reduction, resulting in pronounced bunching at this point. Third, we demonstrate that these responses are persistent, with firms incurring higher tax liabilities in subsequent years after benefiting from the policy. Fourth, we estimate the relationship between taxable income growth reported in corporate tax returns and value-added growth from VAT returns, providing evidence of strategic over-reporting of taxable income. Fifth, we show that participation in this tax reduction program is associated with a decline in reported exempted profits, a strategy that facilitates inflating taxable income growth.

This study contributes to three strands of literature. First, it aligns with research on behavioral responses to corporate taxation, which primarily focuses on developed countries (Devereux et al., 2014), leaving limited evidence for developing contexts (Bachas and Soto, 2021; Lobel et al., 2024). Second, it engages with literature on tax compliance policies

in developing countries (Al-Karablieh et al., 2021; Langenmayr, 2017; Almunia and Lopez-Rodriguez, 2018). Finally, it contributes to the methodological literature on bunching analysis, originally developed by Saez (2010). We build on the framework of Kleven and Waseem (2013) by extending their formula to estimate a semi-elasticity that captures the effect of tax reductions on taxable income growth.

The remainder of this paper is organized as follows. Section 2 provides an overview of Iran's corporate tax system and the data sources used. Section 3 presents a conceptual framework illustrating how tax reductions affect firm reporting behavior. Section 4 provides empirical evidence of firms' behavioral responses to the tax policy, including bunching estimates and dynamic effects. Section 5 investigates the mechanisms underlying these responses—such as over-reporting, exemption reclassification, intertemporal income shifting, and information frictions within business groups. Section 6 concludes.

2 Institutional Context and Data

In Iran, corporations are required to file annual tax returns, and the standard corporate tax rate is 25 percent. The rate applies after deductions for allowable expenses and exemptions. In 2014, the Iranian government introduced a tax policy aimed at incentivizing company growth. This was done by granting reductions in corporate tax rates for firms achieving specified increases in taxable income. Under this policy, every 10 percentage point increase in a firm's taxable income over the previous year qualifies for a 1 percentage point reduction in the statutory corporate tax rate, capped at a 5 percentage point maximum discount. Corporate tax rates of 25 percent apply to all firm profits after exemptions and deductions. Eligibility for this tax reduction requires firms to have settled their previous year's tax obligations and submitted their tax returns by the established deadline (see Figure 1).

This incentive structure, however, introduces a notch in the tax system, creating incentives for firms to strategically over-report income growth to secure a lower effective tax rate.

For instance, a firm with an actual 8 percent growth in taxable income would face the full 25 percent tax rate, but by reporting a slightly higher income growth of 10 percent, it could lower its tax rate to 24 percent, yielding a higher after-tax profit. Such distortions may encourage firms to inflate their reported income by understating expenses, taking advantage of weak audit mechanisms that often focus more on fraudulent expense claims than on inflated income. Additionally, this policy creates a dominated regions wherein firms prefer to overstate income growth to maximize cash retention, especially in a high-inflation environment. Figure 2 shows the inflation trend during the studied period, illustrating conditions that likely magnify nominal income growth. Figure 2 also depicts the increasing number of firms applying for this tax discount from 2013 to 2022, with over 50,000 firms participating, collectively representing between 35 and 75 percent of total corporate tax obligations in different years.

To assess the impact of this policy, we use three main datasets. First, we draw on corporate income tax returns, which consist of annual filings submitted by Iranian firms within four months after the end of their fiscal year. Most firms operate on the Jalali calendar, and our data cover the period from 1392 to 1400 (corresponding to 2013–2014 through 2021–2022 in the Gregorian calendar), enabling us to track taxable income growth over eight years.

Second, we use quarterly VAT returns, which report total value-added by firms each season but lack detailed disaggregation. We have access to high-quality VAT return data for the years 1396 to 1400 (corresponding to 2017–2018 through 2021–2022 in the Gregorian calendar). These returns are submitted quarterly, resulting in four declarations per firm each year. To compare firms' growth patterns across the income tax and VAT bases, we calculated the total declared value-added for each firm by summing its quarterly VAT filings within each fiscal year. We then computed annual growth rates in value-added for each firm over this five-year period. In total, each firm could contribute up to four annual VAT-based growth rates to the analysis, enabling us to cross-check growth dynamics in VAT declarations

against those reported in corporate income tax returns.

Third, we utilize tax audit data, which contain audit results from the tax department, including adjustments made by auditors to taxable income or value-added. While all annual tax returns are audited, only 30 percent of VAT returns undergo auditing. This dataset also includes finalized tax liabilities for contested cases, offering further insight into firms' tax compliance behavior.

Table 1 presents summary statistics for key firm-level outcomes between 2016 and 2021, separated by applicant status. We report average values for taxable income, tax liability, gross profit, labor force, and value-added for firms that applied for the tax reduction (applicants) and those that did not (non-applicants). Firms that applied for the tax benefit consistently report much higher levels of taxable income and tax liability. For instance, in 2021, the average taxable income of applicants was 2.464 billion IRR, compared to just 0.069 billion IRR for non-applicants. This disparity is reflected in tax liabilities as well, with applicants paying nearly 36 times more on average. These differences highlight the higher profitability and greater tax contributions of participating firms.

Applicants also report significantly higher gross profits and value-added, suggesting they operate on a larger scale or with higher productivity. The average number of employees further illustrates this gap. Applicant firms employ, on average, about 90 workers each year, while non-applicants maintain a labor force of only 25 to 50 employees. These figures underscore that applicants are generally larger and more established firms.

Notably, the differences in most variables widen over time, particularly after 2019. This may reflect either self-selection of high-growth firms into the program or diverging growth paths influenced by the policy itself. These descriptive patterns motivate the need for further empirical analysis to distinguish causal effects from selection dynamics.

3 Conceptual Framework

In this section, we present a simplified model of a firm's decision-making process regarding the reporting of its taxable income to motivate our empirical analysis. While the decision to overstate income has implications for future tax obligations—such as the risk that auditors may reject lower taxable income in subsequent audits—we focus on a static model that analyzes the firm's optimal income reporting decision in the current period. The firm begins with its reported income from the previous period ($\pi^{\sim}_{i,t-1}$) and chooses its reported income for the current period ($\pi^{\sim}_{i,t}$) and the level of tax evasion ($e_{i,t}$) for this period. Importantly, the actual income of the firm ($\pi_{i,t}$) is determined exogenously, reflecting the true economic performance, over which the firm has no control. In other words, firms can only engage in tax evasion, and real income growth (due to tax reductions) is ignored in this model.

We assume that the firm's actual income changes according to the following equation:

$$\pi_{i,t} = \rho_t \pi_{i,t-1} + \epsilon_{i,t} \tag{1}$$

where ρ_t is an index that depends on inflation and the annual growth rate of the economy. The error term, $\epsilon_{i,t}$, follows a normal distribution $N(0, \sigma^2)$, indicating that actual income is determined by broader economic conditions rather than firm-specific decisions. This assumption simplifies the model, reflecting the difficulty of firms in generating real income growth amidst the economic uncertainty in Iran. It is unlikely that firms would invest additional resources to increase growth simply to benefit from tax reductions. This assumption will be revisited in our empirical analysis.

The firm's decision-making process in this framework involves maximizing its net benefit from reporting income:

$$\max_{e_{i,t}} \left(\pi_{i,t} - ce_{i,t} - T_{j,i,t}\right) \tag{2}$$

where $T_{j,i,t}$ represents the tax obligation of firm i in period t, under tax regime j. The value of j can be either 0 (pre-reform period) or 1 (post-reform period). The parameter c reflects

the cost of tax evasion. In contrast, over-reporting income to benefit from tax rebate does not incur a direct cost in the model.

The variable $e_{i,t}$ represents the firm's level of tax evasion in period t, defined as the percentage difference between its actual income and the reported income from the previous period. If the firm wishes to overstate its income, we assume $e_{i,t} = 0$, meaning the firm reports income higher than its true value. The tax evasion function is therefore defined as a piecewise function:

$$e_{i,t} = \begin{cases} \frac{\pi_{i,t} - \tilde{\pi_{i,t}}}{\tilde{\pi_{i,t-1}}} & \text{if } \tilde{\pi_{i,t}} - \pi_{i,t} < 0 \\ 0 & \text{if } \tilde{\pi_{i,t}} - \pi_{i,t} \geq 0 \end{cases} \tag{3}$$

Moreover, we define the firm's tax obligations in the pre-reform and post-reform periods as $T_0(\tilde{\pi_{i,t}})$ and $T_1(\tilde{\pi_{i,t}}, \tilde{\pi_{i,t-1}})$, respectively. We know that:

$$T_0(\tilde{\pi_{i,t}}) = \tau \tilde{\pi_{i,t}}, \quad \text{where} \quad \tau = 25\% \tag{4}$$

However, the post-reform tax function, T_1, is defined piecewise to account for tax exemptions due to reported income growth. To capture these exemptions, we introduce the variable $v_{i,t}$, which represents the percentage increase in reported income compared to the previous period:

$$v_{i,t} = \frac{10 \times (\tilde{\pi_{i,t}} - \pi_{i,t-1})}{\tilde{\pi_{i,t-1}}} \tag{5}$$

Using this, we define the exemption function as:

$$\text{exemption}_{i,t} = \begin{cases} 0 & \text{if } v_{i,t} \leq 0 \\ 0.01 \lfloor v_{i,t} \rfloor & \text{if } 0 < v_{i,t} < 5 \\ 0.05 & \text{if } v_{i,t} \geq 5 \end{cases} \tag{6}$$

The firm's tax obligation in the post-reform period can then be defined as:

$$T_1(\pi^{\sim}_{i,t}, \pi^{\sim}_{i,t-1}) = (\tau - \text{exemption}_{i,t})\pi^{\sim}_{i,t} \tag{7}$$

When analyzing this problem in a static framework, we focus on the firm's decision-making process with respect to the current tax incentive, assuming that only the 10 percent growth threshold is relevant. The optimal response function for firms, given real income growth rates between 0 and 20 percent, is depicted in Figure 3. This figure illustrates that a significant portion of the distribution of actual income growth is affected by the policy. Firms with more than a 5.6 percent increase in their income tend to overstate their growth, reporting a 10 percent increase, as this maximizes their post-tax profits.

This policy effectively creates regions where firms are incentivized to overstate their income growth in order to reduce their tax liabilities. The presence of these dominated regions highlights the unintended consequences of the policy, allowing firms to exploit the tax system in a high-inflation context. Although the policy aims to reward nominal growth, it inadvertently facilitates tax avoidance strategies that influence corporate behavior.

4 Behavioral Responses to Tax Notches

This section presents graphical evidence and an empirical analysis of firms' behavioral responses to notches in the corporate tax schedule. The analysis reveals significant bunching at the 50% growth threshold, corresponding to the maximum tax discount available under the amended tax law.

Figure 4 illustrates the change in the distribution of taxable income growth rates among corporations, comparing the initial two years of the dataset to the last two years. In the latter period, pronounced bunching is evident at the 50% threshold, a pattern absent in the earlier years. This finding indicates that firms adjusted their reported growth rates to capitalize on the tax incentives.

However, the observed bunching may have multiple underlying causes. Figure 5 compares the distributions of growth rates for two distinct groups of corporations: those that settled their previous year's tax liability and those that did not. The figure shows that firms meeting their prior tax obligations exhibit more pronounced bunching at the threshold. This suggests that the eligibility requirements for tax reductions incentivized firms to report higher taxable income growth.

Further insights can be obtained by analyzing the yearly distributions, distinguishing between firms that applied for tax reductions and those that did not. Figure 6 demonstrates an increasing concentration of firms around the 50% threshold over the study period. This trend implies a strengthening effort among firms to maximize tax benefits over time.

In the following subsection, we introduce the standard bunching framework to quantitatively estimate the policy's effect on firms' taxable income growth. We then examine the dynamic effects of this policy on firms' tax liabilities in subsequent years, focusing on the longer-term behavioral and fiscal impacts of the tax reductions.

4.1 Bunching Estimation

To quantify the growth response to tax incentives, we apply the bunching estimation method developed by Kleven and Waseem (2013). We partition the data into bins of reported taxable income growth and count the number of firms in each bin, denoted as c_j, to construct an empirical density. The counterfactual distribution is estimated using the following regression:

$$c_j = \sum_{i=0}^{p} \beta_i (z_j)^i + \sum_{i=z_L}^{z_U} \gamma_i \cdot 1[z_j = i] + v_j \tag{8}$$

where z_j is the reported growth in bin j, p is the polynomial order, and the range $[z_L, z_U]$ represents the excluded area around the notch point, capturing excess or missing mass (see Figure 7). We present results based on counterfactual distributions estimated following standard practice. Specifically, we estimate predicted values from specification (1) while

omitting the contribution of dummies in the excluded range:

$$c_j = \sum_{i=0}^{p} \beta_i (z_j)^i \tag{9}$$

Excess masses are calculated as the difference between the observed and counterfactual bin counts in the relevant ranges of reported growth, formally defined as $B = \sum_{j \in [z_L, z_U]} (c_j - \hat{c}_j)$. We then extend the reduced-form elasticity framework introduced by Kleven and Waseem (2013) to derive a semi-elasticity of growth with respect to the tax rate change. This semi-elasticity captures the degree to which firms adjust their reported growth in response to the tax incentive and is given by:

$$e \equiv \frac{\Delta z^*}{\Delta t^*} \approx \frac{\left(\frac{B}{h(z^*)}\right)^2}{z^* \Delta t} = \frac{b^2}{z^* \cdot \Delta t}, \tag{10}$$

where e represents the semi-elasticity, Δz^* denotes the change in reported taxable income growth at the threshold, and Δt^* is the change in the marginal tax rate. Here, B captures the excess mass, $h(z^*)$ is the height of the counterfactual distribution at the threshold, z^* is the growth threshold, and Δt reflects the tax rate differential.

This semi-elasticity measures the percentage change in reported taxable income growth in response to a one percentage-point decrease in the tax rate. Notably, the elasticity is derived without assuming a specific functional form for the firm's optimization problem, making it robust to different underlying behavioral assumptions.

4.2 Bunching Results

Figure 7 illustrates the observed and counterfactual densities around the 50 percent growth threshold for the years 2016 to 2021. The vertical blue lines indicate the tax reduction thresholds, while the red line represents the counterfactual density, estimated using Equation 8. Yearly estimates of the semi-elasticities are presented in Table 2, showing a consistent upward trend over time. On average, across all years, the marginal buncher increases their

reported growth by 1.17 percentage points to maximize tax reductions.

Our analysis yields three key findings regarding firms' responses to the tax incentive. First, we document a clear concentration of firms at the 50 percent growth threshold, showing strong behavioral responses to the maximum tax discount. While smaller bunching is also visible at lower thresholds (10, 20, and 30 percent), these are less pronounced, emphasizing the dominant role of the highest discount.

Second, the bunching distribution around the 50 percent threshold is fairly symmetric, and importantly, there is no evident hole (missing mass) on the left side of the threshold. This absence of a hole suggests the presence of frictions or adjustment costs that prevent firms from perfectly relocating just below the threshold. It also indicates that firms bunch at the threshold not only by slightly inflating growth from just below (e.g., from 49 to 50 percent), but also by shifting from other parts of the distribution, implying broader adjustment strategies.

Third, we observe that bunching has become more pronounced over time, suggesting that firms increasingly learn about the policy and adjust their behavior to take advantage of it. This pattern is supported by the estimates in Table 2, which show a consistent rise in the semi-elasticity of reported growth relative to the tax rate cut.

4.3 Persistent Effects on Taxable Income

We examine the long-term effects of the tax policy on firms' taxable income using a two-way fixed effects model:

$$Y_{it} = \delta_i + \eta_t + \sum_{j=F_i-5}^{F_i+4} \gamma_j \cdot 1[D_{it} = d] + \psi X_{it} + \epsilon_{it} \tag{11}$$

In this model, δ_i represents firm-specific fixed effects, while η_t denotes year-specific fixed effects. F_i indicates the year a firm first applies for the tax reduction, and $D_{it} = t - F_i$ are dummies marking the time relative to this event. The vector X_{it} includes time-varying firm

characteristics, such as growth rates. This approach allows us to analyze how firms' taxable income evolves in the years after the policy is implemented.

Figure 8 presents the results using taxable income as the dependent variable. It indicates that there are no significant differences between applicant firms and non-applicants prior to the policy, suggesting the absence of any pre-trend. However, a persistent and significant increase in taxable income is observed, lasting for at least four years.

To further explore the long-term effects of the tax policy, we complement the analysis of taxable income with three additional outcomes: labor force size, reported value-added (in a separate tax base), and value-added growth. Figure 9 reveals a marked and persistent increase in labor force participation following the first year of policy take-up. Firms show no significant pre-trends, but from the year of policy participation onward, there is a steady rise in labor force levels, suggesting that the policy may have encouraged not only income reporting changes but also real hiring behavior. Figure 9 shows a similar trajectory for reported value-added, with firms exhibiting substantial gains post-policy and no significant differences before the tax break. This result supports the hypothesis that firms potentially expanded operations to meet reported growth targets.

Figure 9 presents value-added growth as a percent change, reinforcing the earlier findings. Growth in the value-added base surges in the year of tax reduction and remains elevated in subsequent years, although with more variability than the level-based measure. These findings, combined with the taxable income results in Figure 8, suggest that the tax incentive program had enduring effects not just on reported taxable income but also on real activity proxied by labor force size and value-added. The consistency across outcomes, and the absence of differential trends prior to policy application, supports a causal interpretation. Together, these event-study results indicate that the tax incentive may have led to a combination of behavioral reporting responses and real changes in firm activity.

5 The Anatomy of Behavioral Responses

This section examines the underlying mechanisms driving the behavioral responses documented in our analysis. Firms facing the tax incentive can respond in two primary ways. First, they may over-report their taxable income growth to meet the thresholds required for tax reductions, inflating their declared income while actual economic activity remains unchanged. Second, they may reduce the share of their reported exempted income, shifting more of their earnings into taxable categories to qualify for the lower tax rates. The following subsections explore these mechanisms in detail.

5.1 Over-reporting of Taxable Income Growth

Firms situated in dominated regions are incentivized to over-report their income growth to lower their tax liabilities. Using an approach similar to that of Chen et al. Chen et al. (2021), we find that firms report higher annual growth in taxable income within the corporate tax base compared to their value-added growth, as captured in Value-Added Tax (VAT) returns.

Figure 10 displays the average annual value-added growth for firms, organized into bins, based on their quarterly VAT returns. It is important to highlight that during the period and in most districts examined, the auditing procedures for these two tax bases in Iran were largely separate, with auditors of one base lacking access to the data or records of the other.

As depicted in Figure 10, there is a clear discontinuous drop at the 50% threshold, implying that some firms might be exaggerating their reported taxable income growth to take advantage of more tax reductions.

We estimate third-degree polynomial relationships separately for each side of the 50% threshold and for two distinct groups: firms applying for the tax reduction and those not applying. The estimated changes at the 50% threshold are calculated for both groups, and the difference between the two is derived. This approach can be described as a "difference-in-discontinuity" method. The regression model used in this analysis is as follows:

$$
\begin{aligned}
Y_{it} = \beta_0 &+ \gamma(\text{RHS}_{it} \times T_{it}) + \beta_1 T_{it} + \beta_2 \text{RHS}_{it} \\
&+ \beta_3 \cdot 1[-50 < \hat{g}_{it} < 0] \cdot 1[T_{it} = 1] \cdot f_1(\hat{g}_{it}) \\
&+ \beta_4 \cdot 1[-50 < \hat{g}_{it} < 0] \cdot 1[T_{it} = 0] \cdot f_2(\hat{g}_{it}) \\
&+ \beta_5 \cdot 1[0 < \hat{g}_{it} < 50] \cdot 1[T_{it} = 1] \cdot f_3(\hat{g}_{it}) \\
&+ \beta_6 \cdot 1[0 < \hat{g}_{it} < 50] \cdot 1[T_{it} = 0] \cdot f_4(\hat{g}_{it}) \\
&+ \epsilon_{i,t}.
\end{aligned} \tag{12}
$$

The variable T_{it} indicates whether a firm applied for the tax reduction in a given year. RHS_{it} is a binary variable that equals one if the firm's growth rate lies to the right of the 50% threshold. The variable $\hat{g}_{it}$ measures the distance to the 50% threshold. Consequently, β_0 represents the average outcome for non-applying firms on the left side of the threshold, while β_1 captures the difference in intercepts between the two groups (applicants and non-applicants). β_2 reflects the difference between the two sides of the threshold for non-applicants, and γ represents the differential threshold effect between applicants and non-applicants.

The regression results based on Equation 3 are presented in Table 3. The findings reveal that firms bunching at the 50 percent threshold exhibit a value-added growth rate that is 11.09 percentage points lower than the control group. The control group comprises firms with growth rates equivalent to the treatment group in their annual corporate tax base but that did not apply for the 5 percent tax reduction.

This regression model offers at least one advantage and raises one concern. The advantage lies in controlling for the heterogeneous characteristics of firms targeting round growth numbers, which mitigates concerns about differences between "bunchers" and firms with growth rates just to the left of the threshold. However, a potential limitation is the possibility of spillover effects between the two groups. Specifically, the presence of the tax reduction policy may influence non-applying firms to target the 50% growth threshold, thereby altering their behavior. This regression model does not account for such spillover effects.

5.2 Reducing the Proportion of Exemptions

In Iran, firms are permitted to classify specific categories of income as exempted, shielding them from taxation. These exemptions are reported in a designated section of the Iranian corporate tax returns. To investigate the impact of applying for tax rate reductions on firms' exemption reporting behavior, we employ an event study design, as specified in Equation 11.

Figure 11 illustrates that firms applying for tax reductions significantly decrease the proportion of their exempted incomes. This pattern likely reflects a strategic adjustment aimed at inflating taxable income, enabling firms to achieve higher reported growth rates and maximize tax reductions. Firms may also use this strategy to avoid the stricter audits that often apply to exempted income.

This observation is particularly notable given the significant scale of reported tax exemptions in Iran. Specifically, the total amount of tax liabilities categorized as exempted amounts to 3,450 billion IRR, compared to just 1,000 billion IRR reported as payable tax liabilities.

5.3 Intertemporal Income Shifting

A growing body of empirical research demonstrates that firms engage in intertemporal profit shifting to minimize tax liabilities by manipulating the timing of income and deductions (Miller et al., 2024; Dowd et al., 2020; Hanlon and Hoopes, 2014). One key mechanism under growth-based tax incentives is the forward shifting of taxable income: firms may report inflated profits in the current year to meet the required growth threshold for a rate discount, which is then followed by a reduction in reported profits—and thus tax payments—in subsequent years. This may be facilitated by deferring deductible expenses to the following tax year.

Evidence from the event study presented in Figure 12 supports this interpretation. In the first year of treatment (year 0), the likelihood that a firm reports exactly the same taxable income as in the prior year drops sharply, before rebounding above pre-treatment levels in

the following year. This suggests that firms intentionally avoid anchoring on past income figures in year 0 to overstate growth and qualify for the tax benefit, then return to their usual reporting behavior once the incentive is no longer available. In effect, reported profits are strategically manipulated to maximize the benefit from the policy, without corresponding changes in real activity.

This behavior aligns with recent findings in the literature. Tourek (2022) shows that many Rwandan firms engage in nominal income targeting and persist in paying the same tax amounts even after rates decline. The pattern seen in Figure 12 appears to reflect a temporary, strategic deviation in reporting, reinforcing the interpretation that observed growth is primarily mechanical—an artifact of intertemporal income shifting rather than true economic expansion.

5.4 Information Frictions and Related Firms

One of the challenges highlighted in our results is the presence of a large number of firms to the left of the 50 percent taxable income growth threshold. This bunching pattern suggests that substantial frictions prevent firms from perfectly optimizing their tax behavior in response to incentives. The tax literature has extensively explored adjustment frictions—including learning costs, salience, and administrative complexity—to explain the persistence of firms in dominated regions, where the marginal benefit of compliance does not outweigh the associated adjustment costs. Seminal work by Kleven and Waseem (2013), Gelber et al. (2020), and Zaresani (2020) formalizes these frictions, while related behavioral studies have emphasized the role of information barriers in limiting take-up of beneficial tax policies (Chetty et al., 2009; Bhargava and Manoli, 2015).

We extend this line of inquiry by exploring a potentially under-examined friction: the lack of information about the policy itself or about optimal reporting behavior. Firms may fail to position themselves exactly at the 50 percent growth threshold simply because they are unaware of the tax incentive or lack the capacity to implement precise reporting strategies.

This hypothesis aligns with empirical findings from behavioral tax experiments showing that simple informational nudges—such as clearer communication of eligibility criteria—can substantially increase compliance and program take-up (De Neve et al., 2021; Hallsworth et al., 2017; Bhargava and Manoli, 2015; Custodio et al., 2022).

While a randomized controlled trial (RCT) would be ideal to test whether targeted information increases strategic bunching, such a design was not feasible in the Iranian context. In its absence, we adopt an alternative approach to examine whether information spreads endogenously within business groups. Specifically, we investigate whether tax behaviors are correlated among related firms—particularly those with parent-subsidiary ownership links—which could be suggestive of peer learning or internal knowledge transfer.

Although Iran's corporate tax return data does not include ownership linkages, we leverage disclosures from the capital market. Listed companies in Iran are required to publish financial statements of subsidiaries with more than 50 percent ownership through the CODAL system. By matching CODAL records to the tax return data using company registration dates and financial statement variables, we construct a novel dataset of 2,562 parent-subsidiary firm pairs. The matching procedure is based on the similarity of balance sheet entries and filing dates, and corresponds to standard unsupervised record linkage techniques in data science (Christen, 2012; Bohne and Nimczik, 2025).

We then analyze the tax behavior of matched firms using an event-study specification similar to Equation 11 and uncover within-group correlations. When a subsidiary firm applies for a 5 percentage point tax reduction, the probability that its parent company also applies increases sharply—by as much as 88 percentage points. This is illustrated in Figure 13, which shows a jump in the parent firm's application probability around the year its subsidiary first takes up the incentive, consistent with the presence of intra-group information spillovers. Conversely, when a parent firm applies, the likelihood that the subsidiary does so increases by 12 percentage points. As shown in Figure 14, this behavioral pattern becomes more pronounced in the years following the parent's initial take-up. These findings suggest a degree

of coordination or shared information within business groups—similar to prior evidence of tax strategy diffusion through managerial networks or shared advisors (Dyreng et al., 2010; Granda, 2021).

To isolate these spillovers from confounding factors such as synchronized growth among affiliated firms, we examine bunching behavior. We find that when a subsidiary both applies for the 5 percentage point discount and bunches at the 50% threshold, the likelihood that the parent company also bunches increases by 26 percentage points. Figure 15 illustrates this dynamic, providing more direct evidence that behavioral responses to tax incentives—specifically, strategic reporting—diffuse within ownership networks, likely through informal channels of information transmission.

While we are not aware of prior empirical work directly analyzing the diffusion of bunching behavior within domestic corporate groups, our findings resonate with studies in other domains showing that tax knowledge and compliance behaviors can propagate through firm networks (Boning et al., 2020; Bohne and Nimczik, 2025). Our results suggest that informational frictions—stemming from lack of awareness or limited internal capacity—may prevent firms from realizing the full benefit of tax incentives. Supporting peer-to-peer learning and improving the transparency of tax incentives could help mitigate these frictions and enhance the efficiency of tax policy.

6 Conclusion

This paper evaluates the effects of a unique corporate tax policy in Iran that rewards firms with tax rate reductions based on nominal growth in taxable income relative to the previous year. Using rich administrative tax return data, we track firm-level taxable income over time and examine how the distribution of reported growth responds to this incentive.

Our findings show that the policy has a significant impact on the distribution of taxable income growth. We document clear evidence of bunching at the 50% growth threshold—the

point at which the maximum tax benefit is awarded. This bunching becomes more pronounced over time, suggesting both learning and strategic adaptation by firms.

We also explore the underlying mechanisms driving this response. First, by comparing growth rates in the corporate income tax base with those derived from VAT returns, we find suggestive evidence that firms over-report taxable income to meet the eligibility threshold. Second, we show that policy participation is associated with a substantial decline in the use of tax exemptions. This behavior appears consistent with firms reclassifying income to increase reported taxable earnings, thereby amplifying the measured growth.

Finally, we examine the role of information frictions in shaping firm behavior. Leveraging matched data on parent–subsidiary relationships from publicly listed firms, we find strong evidence of behavioral spillovers within business groups. Related firms appear to coordinate their responses or learn from each other, with event-study analyses indicating sharp increases in application and bunching behavior following the actions of affiliated firms.

Together, these findings highlight how seemingly simple tax incentives can generate complex behavioral responses—ranging from intertemporal shifting and reclassification to strategic reporting and intra-group learning. Our results underscore the importance of considering firm-level frictions and informational constraints when designing growth-based tax incentives, especially in high-inflation or developing-country contexts.

These findings also open several avenues for future research. One promising direction is to investigate the welfare implications of growth-based tax incentives, particularly in settings with inflationary pressures and limited audit capacity. Experimental or quasi-experimental designs could assess whether informational interventions—such as targeted communication or simplified guidance—help firms respond more efficiently to such policies. Further work could also explore the long-term effects of these incentives on real firm behavior, such as investment, employment, or productivity, rather than just reported outcomes. Finally, future studies could examine the interaction between corporate group structures and tax policy, particularly how information, compliance strategies, and optimization diffuse across ownership networks

or managerial ties.

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Figures

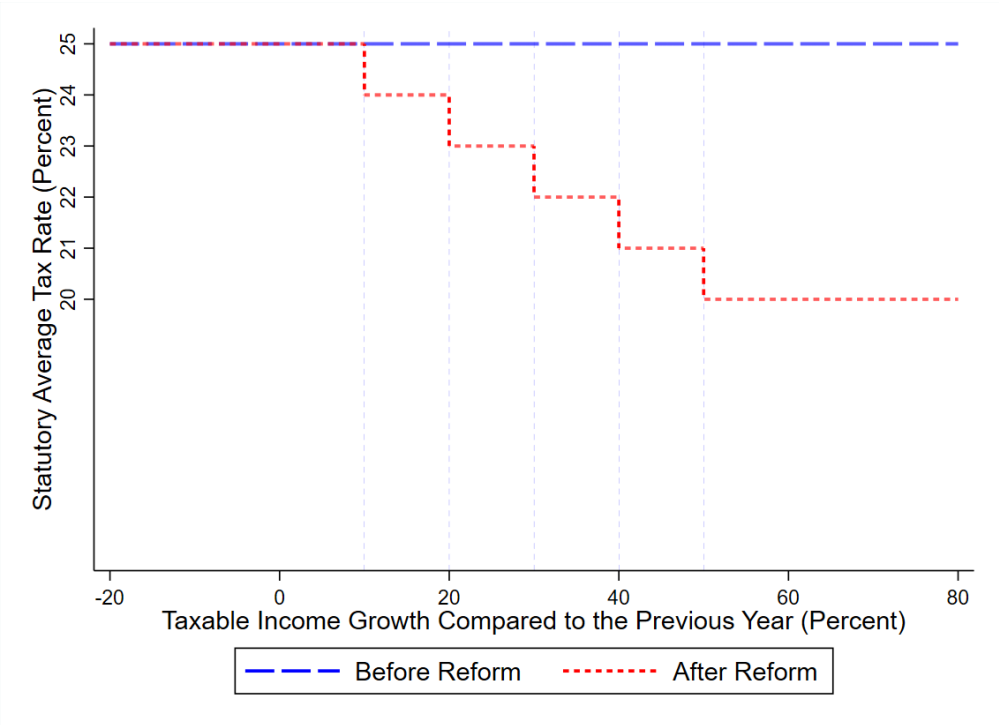


Figure 1: The figure depicts the structure of Iran's corporate tax policy before and after the 2014 reform. Prior to the reform, corporations were subject to a flat 25 percent corporate tax rate on their taxable income, after deductions for allowable expenses and exemptions. In 2014, the government introduced a policy designed to incentivize company growth by granting tax rate reductions to firms that achieved specific increases in taxable income. Under this revised system, for every 10 percentage point increase in taxable income relative to the previous year, firms became eligible for a 1 percentage point reduction in their statutory corporate tax rate, with a maximum reduction of 5 percentage points. The standard 25 percent tax rate continued to apply to all firms that did not meet the required growth thresholds. To qualify for these reductions, firms had to meet specific compliance conditions, including the full settlement of the previous year's tax obligations and timely submission of tax returns.

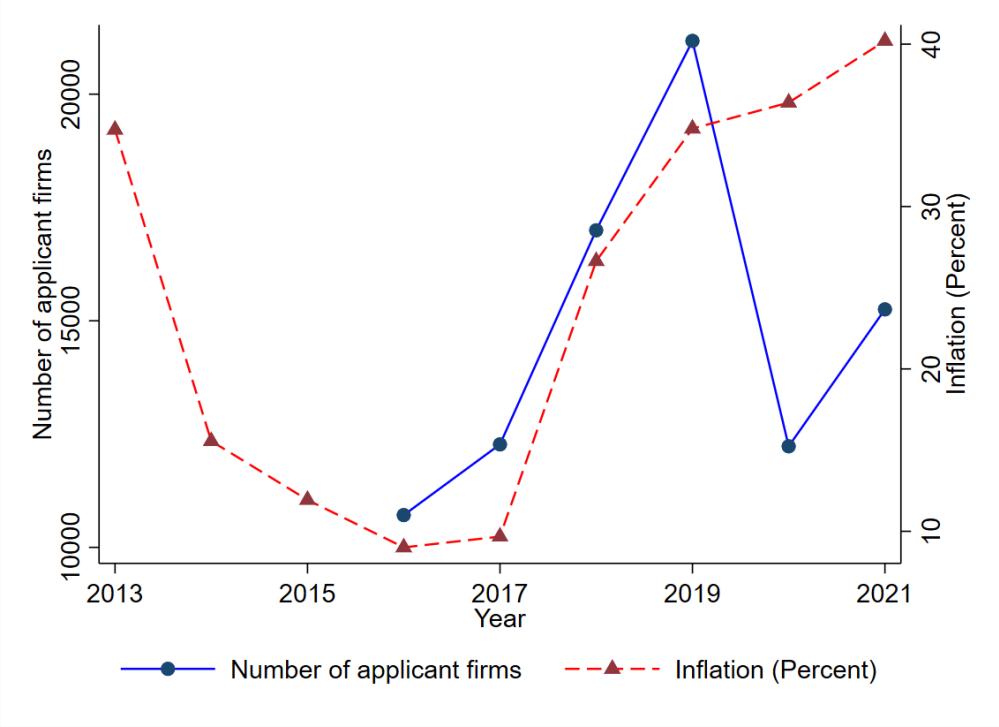


Figure 2: Trends in Inflation and the Number of Firms Applying for the Tax Discount Program in Iran (2013–2021). This figure displays the inflation rate (right axis, red dashed line) alongside the number of firms applying for the corporate tax discount program (left axis, blue solid line) over the study period.

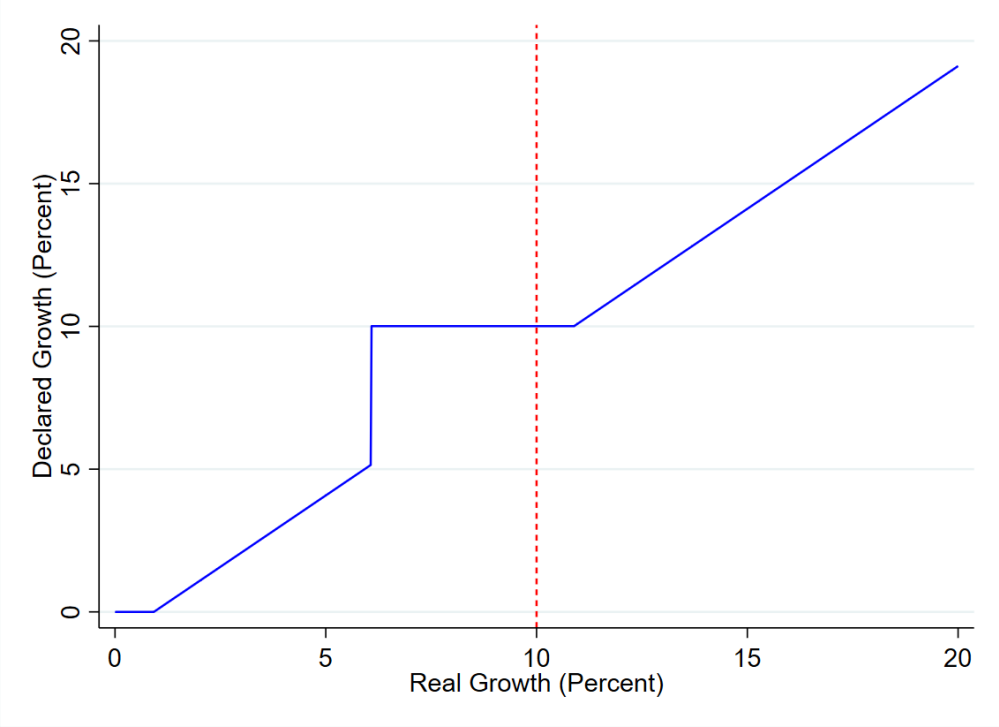


Figure 3: This figure illustrates the best reporting strategy for firms facing real income growth between 0 and 20 percent, given the tax policy's incentives. The x-axis represents the firm's actual growth, while the y-axis indicates the optimal declared growth to minimize tax liabilities. The stepwise pattern shows that firms with real growth rates below the 10 percent threshold have an incentive to overstate their taxable income to reach the threshold, thereby qualifying for a lower tax rate. The red dashed line at 10 percent marks the critical threshold where tax reductions begin.

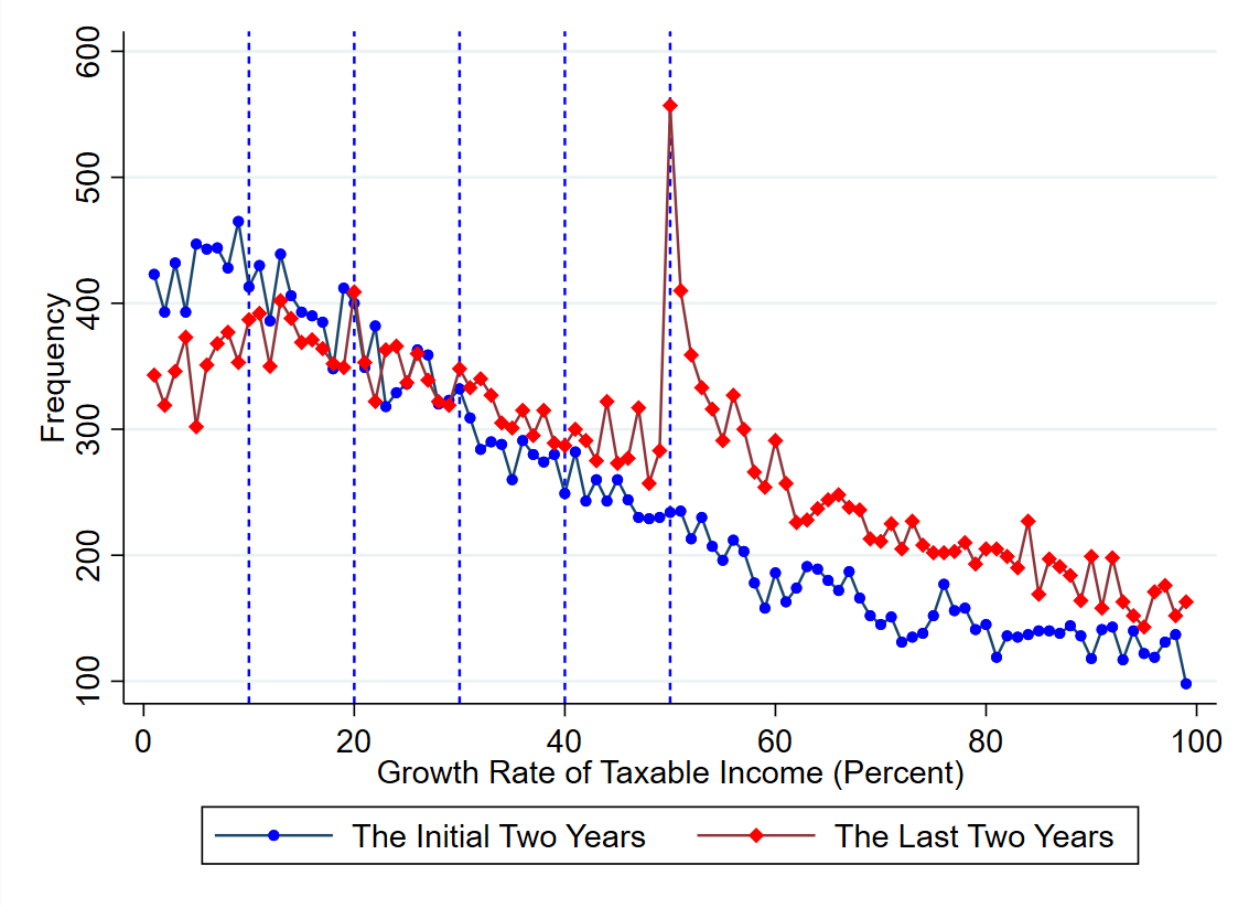


Figure 4: This figure compares the distribution of taxable income growth rates for 2014 and 2015 (the two years leading up to the reforms) with 2020 and 2021 (the last two years available in the data). Over this six-year period, the degree of bunching at the 50% growth threshold has increased markedly. To control for the mechanical effects of rounding on growth calculations, firms with taxable incomes that are multiples of 100,000 Rials have been excluded.

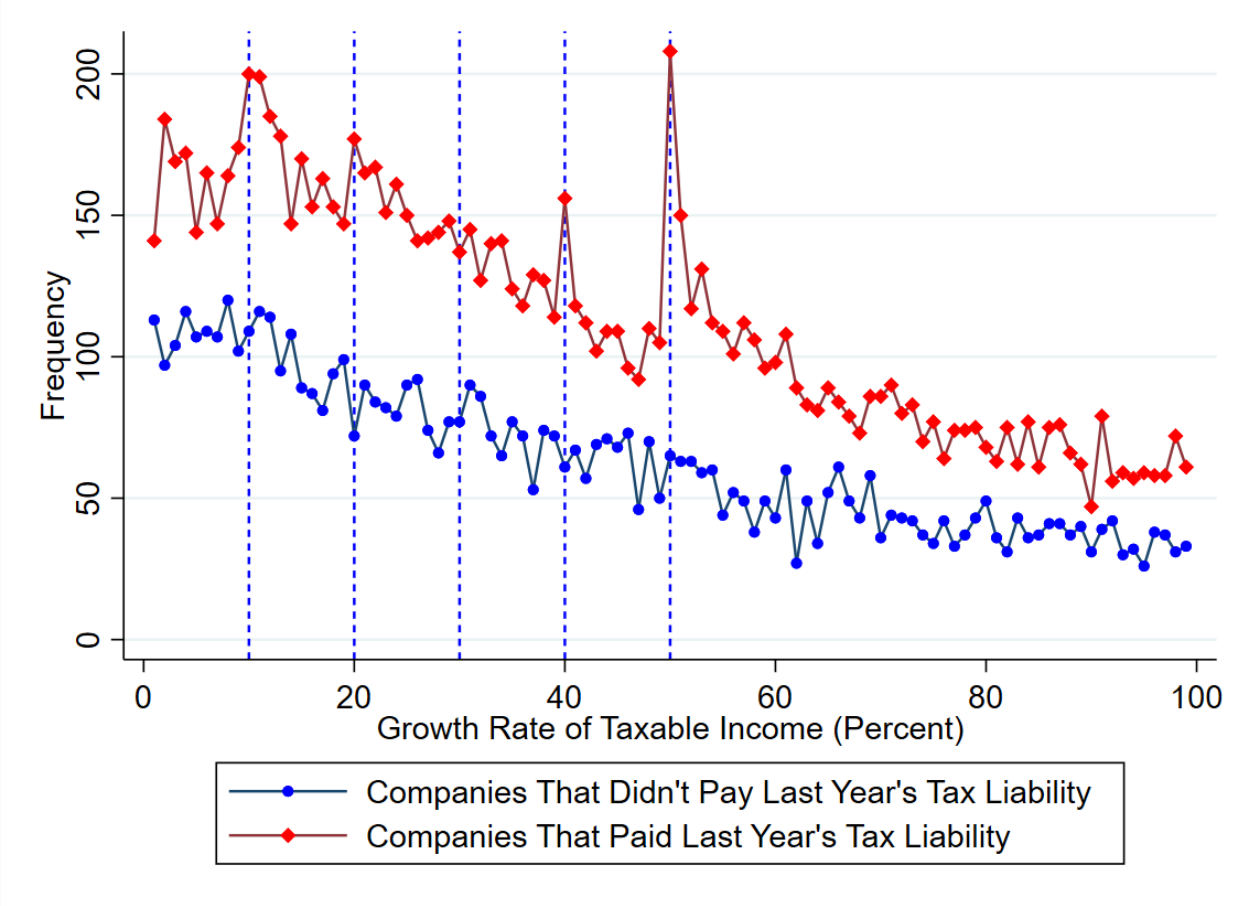


Figure 5: This figure illustrates the distribution of taxable income growth rates for two distinct groups of firms, based on whether they reported paying their previous year's tax liability in their tax returns. This information is available for the years 2016 and 2017. Firms that have settled their previous year's tax obligations are eligible for a tax rate discount, and the figure demonstrates significant bunching in the income growth distribution for these firms. The graph is constructed using a bin width of 1 percent. To control for the mechanical effects of rounding on growth calculations, firms with taxable incomes that are multiples of 100,000 Rials have been excluded.

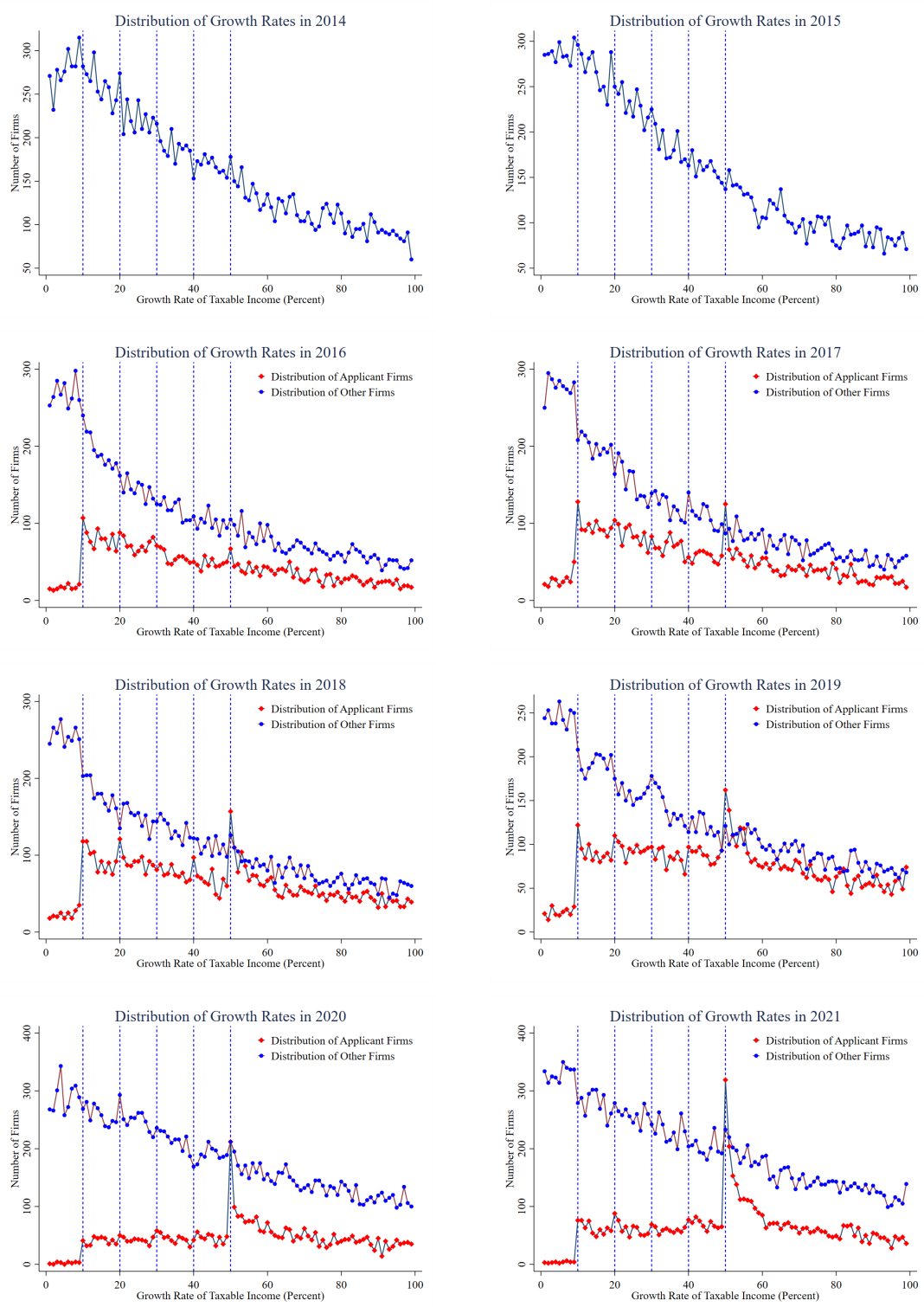


Figure 6: This figure shows the yearly distribution of the growth rate of taxable income for the years 2014 to 2021. The years 2016 to 2021 are the years when it was possible to apply for a tax rate discount. Red diamonds indicate the number of firms that applied for a tax rate discount and had a certain growth rate. Blue circles indicate the number of firms that did not apply for a tax rate discount. To control for the mechanical effects of rounding on growth calculations, firms with taxable incomes that are multiples of 100,000 Rials have been excluded.

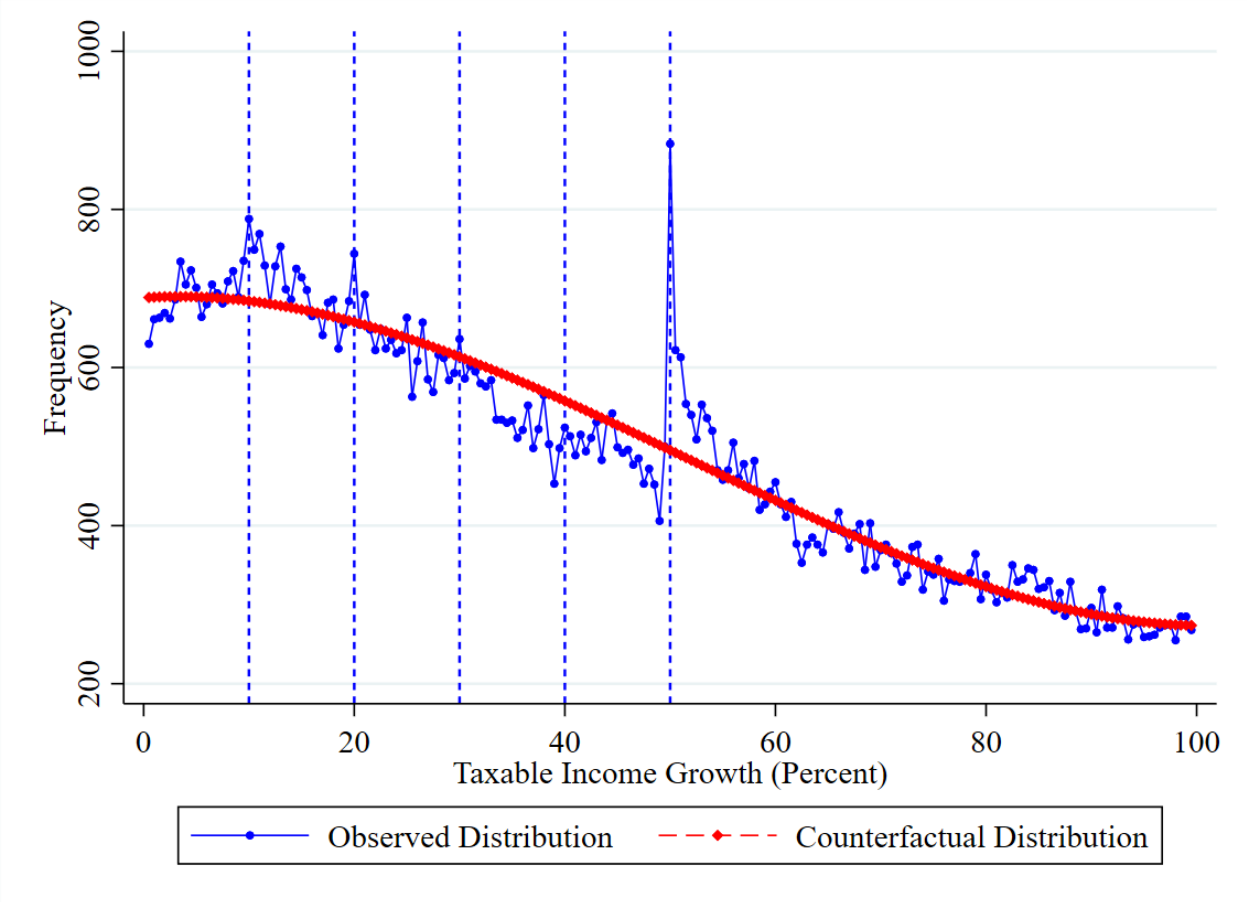


Figure 7: This figure depicts the distribution of taxable income growth rates from 2016 to 2021, alongside the estimated counterfactual distribution as detailed in the text.

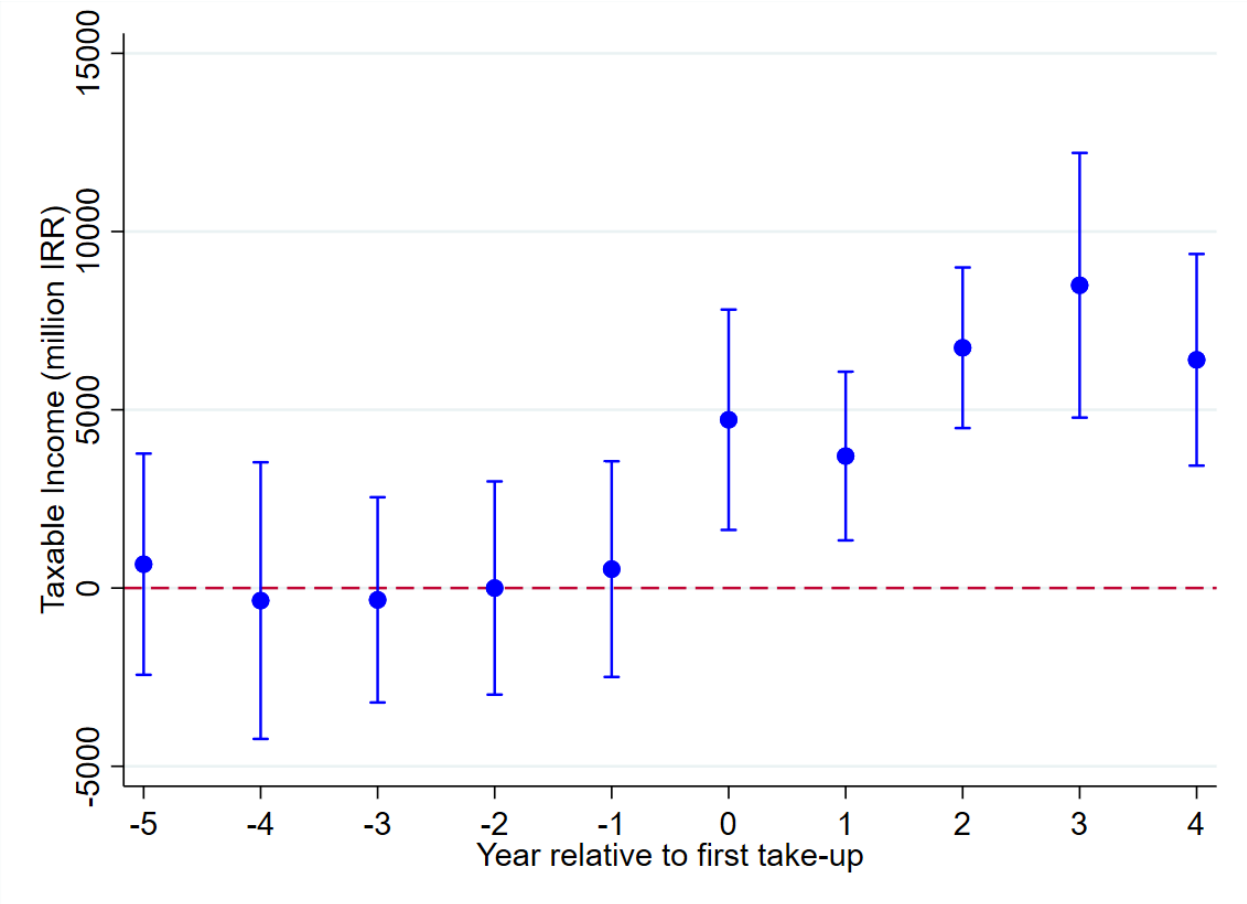
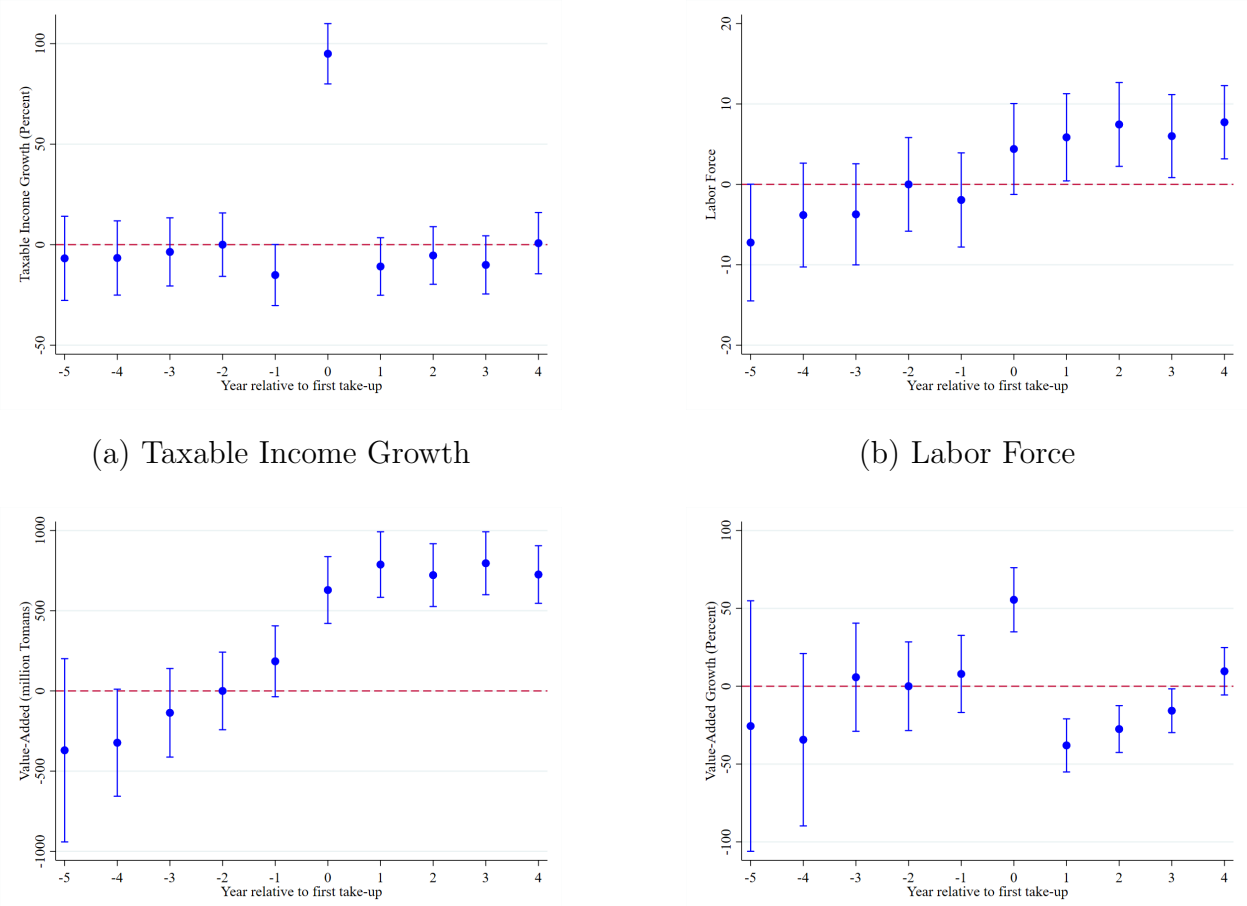


Figure 8: Event-study graph showing the impact of the tax policy on taxable income over time.



(a) Taxable Income Growth

(b) Labor Force

(c) Value-Added (million Tomans)

(d) Value-Added Growth (Percent)

Figure 9: Event study results for key outcomes relative to the year of first policy take-up. Panel (a) shows taxable income growth from corporate tax returns. Panel (b) reports the firm's labor force size. Panel (c) presents total value-added reported in VAT returns. Panel (d) shows growth in VAT-reported value-added.

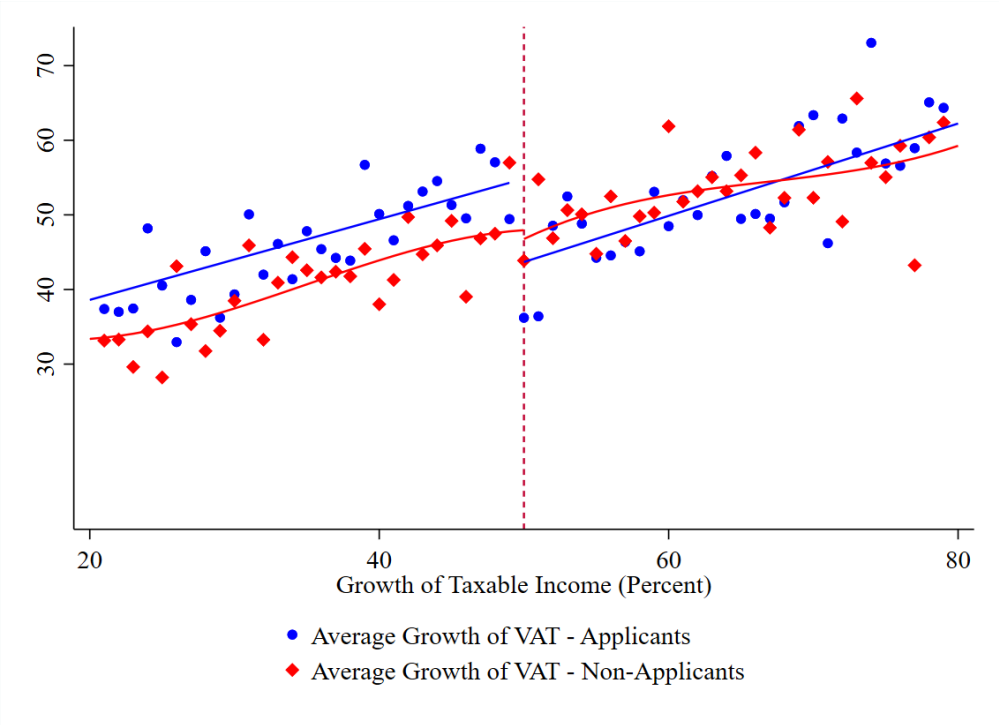


Figure 10: Average annual value-added growth for firms in each bin, based on quarterly VAT returns. The discontinuous drop at the 50% threshold suggests potential over-reporting of taxable income growth to obtain maximum tax benefits.

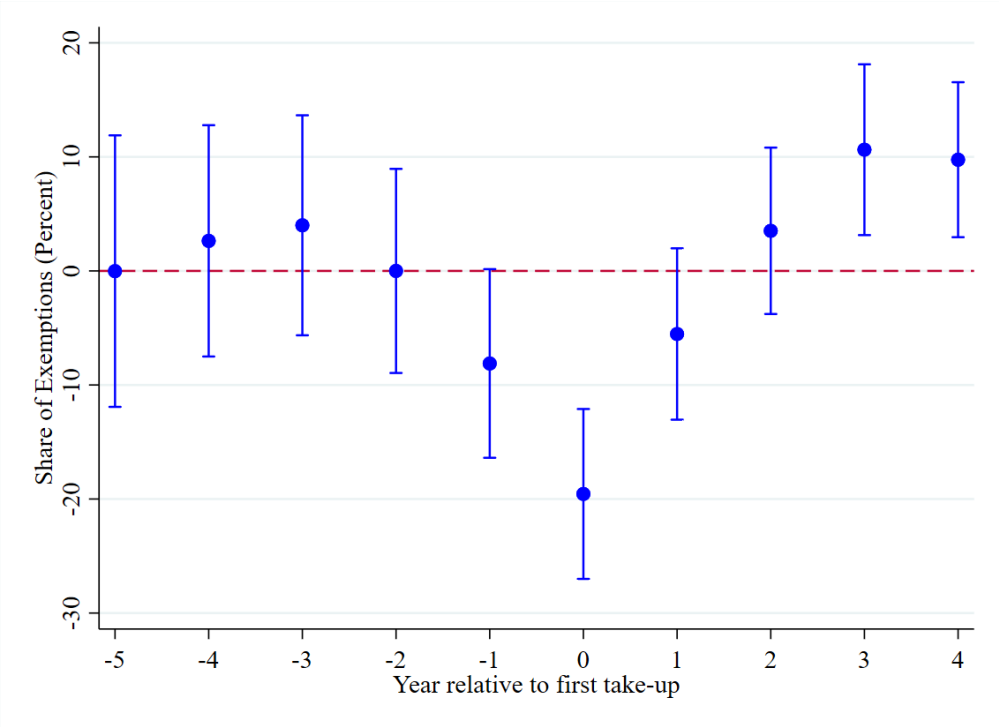


Figure 11: Event-study analysis of the share of exempted incomes reported by firms around the first year they applied for tax reductions. The estimation follows the specification outlined in Equation 11. The figure shows a decrease in the share of taxable (exempted) income immediately after application, consistent with firms strategically reducing the use of exemptions to inflate taxable income and qualify for growth-based rate reductions.

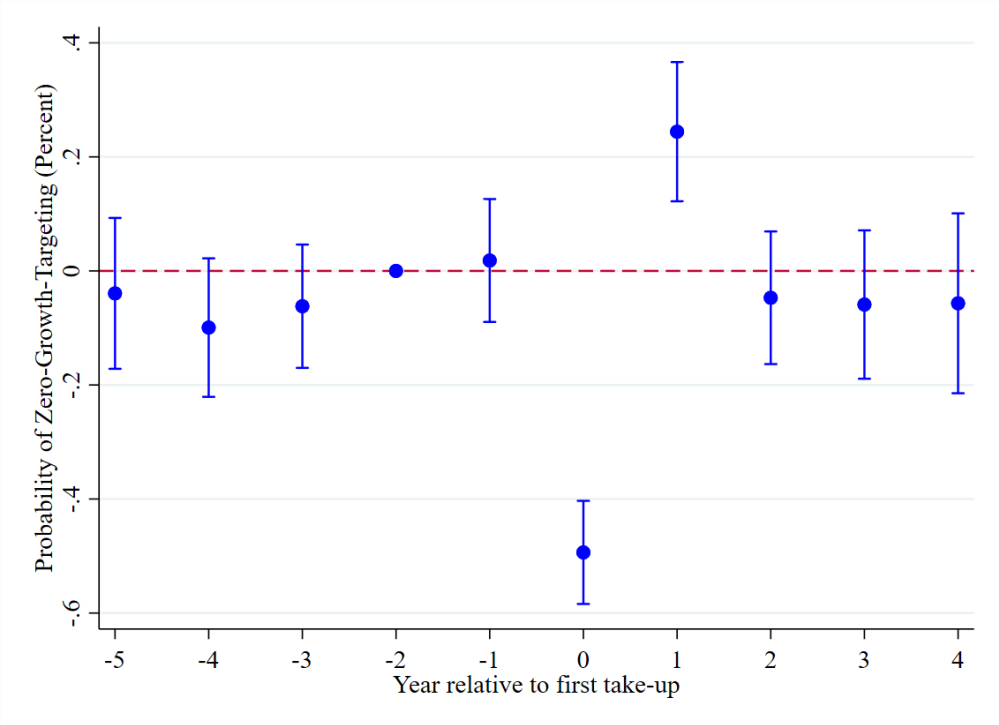


Figure 12: This figure presents event-study estimates of the probability that a firm reports the exact same taxable income as in the previous year (i.e., targets zero growth), by year relative to its first use of the growth-based tax discount (year 0). The sharp decline in year 0, followed by a rebound in year 1, suggests that firms intentionally avoid relying on past earnings in the application year to inflate growth and eligibility for tax reduction, and then revert to their standard reporting behavior. Error bars denote 95% confidence intervals.

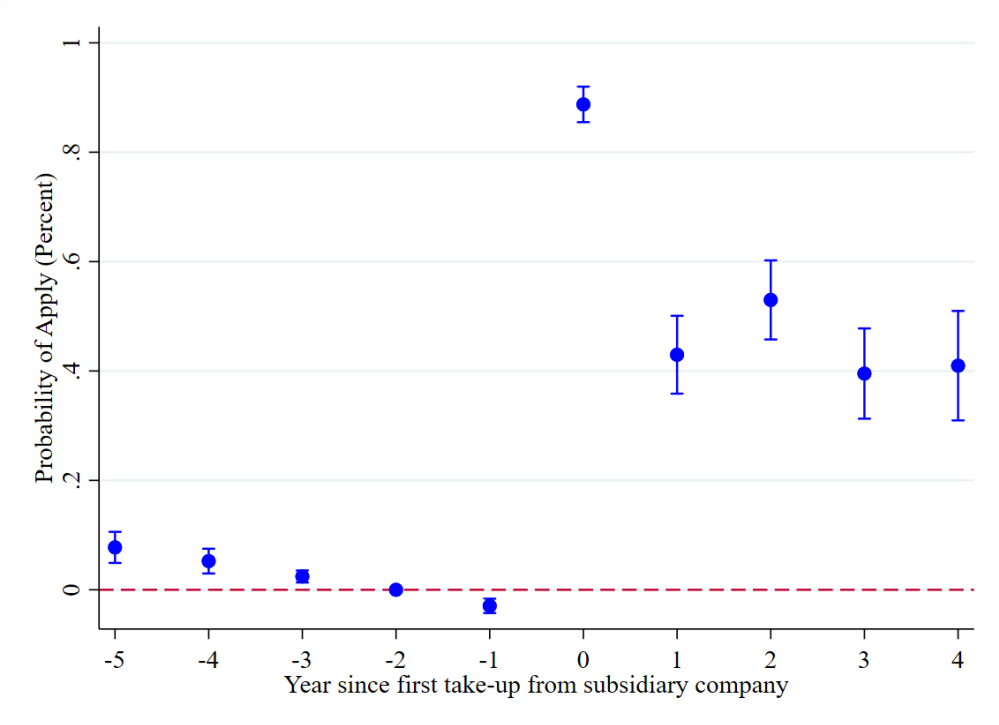


Figure 13: This figure presents an event-study analysis of parent companies' take-up behavior, relative to the first year in which a subsidiary company applies for the 5 percentage point tax rate reduction. The analysis is based on the specification described in Equation 11. The sharp increase in take-up probability at event time zero suggests that subsidiaries' decisions may influence their parent companies' behavior, consistent with information spillovers within business groups.

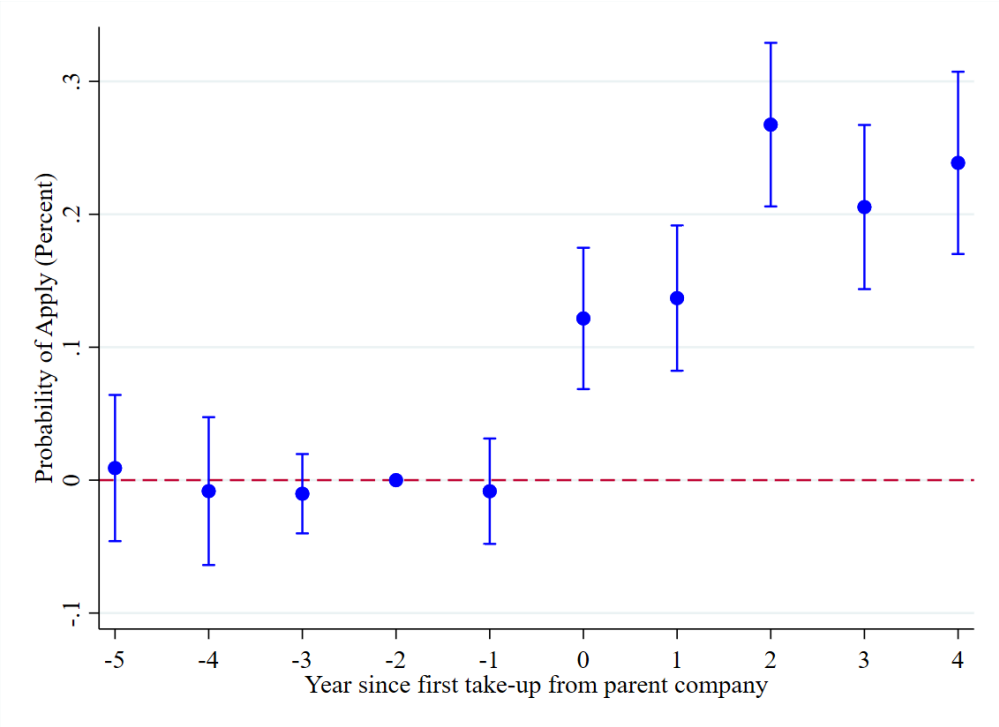


Figure 14: This figure presents an event-study analysis of subsidiary companies' take-up behavior, relative to the first year in which their parent company applies for the 5 percentage point tax rate reduction. The analysis is based on the specification described in Equation 11. The observed increase in the probability of take-up following the parent's decision suggests behavioral spillovers within business groups.

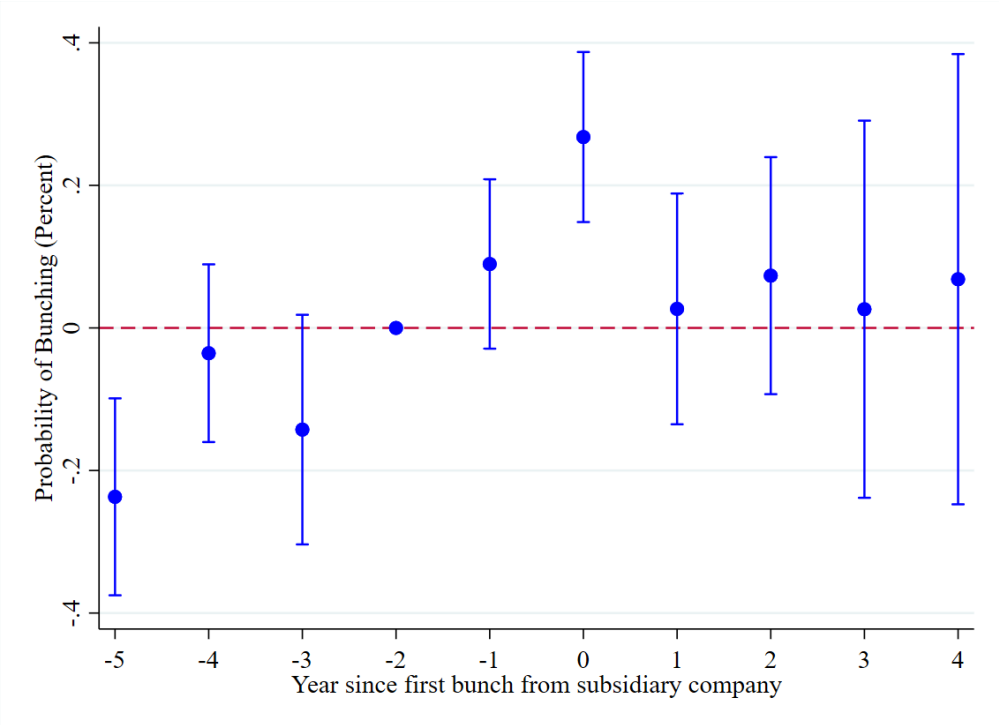


Figure 15: This figure presents an event-study analysis of parent companies' bunching behavior relative to the first year in which their subsidiary company both applies for the 5 percentage point tax rate reduction and bunches at the 50% threshold. Based on the specification in Equation 11, the figure shows a substantial increase in the probability of parent firm bunching in the years following the subsidiary's behavior. This provides more direct evidence of behavioral spillovers in the form of strategic reporting within business groups.

Tables

	Applicants						Non-Applicants					
	2016	2017	2018	2019	2020	2021	2016	2017	2018	2019	2020	2021
Taxable Income	0.797	0.947	1.374	0.980	2.435	2.464	0.048	0.034	0.031	0.038	0.065	0.069
	(17.53)	(24.00)	(37.57)	(23.19)	(36.61)	(50.65)	(4.02)	(2.13)	(1.75)	(3.03)	(5.74)	(9.99)
Tax Liability	0.143	0.174	0.237	0.243	0.604	0.614	0.010	0.007	0.005	0.009	0.016	0.017
	(3.16)	(4.13)	(6.07)	(5.78)	(9.12)	(12.63)	(0.94)	(0.47)	(0.36)	(0.75)	(1.43)	(2.49)
Gross Profit	1.790	2.395	2.772	1.985	4.718	2.803	0.334	0.326	0.314	0.323	0.425	0.215
	(32.07)	(75.75)	(70.99)	(38.61)	(82.22)	(94.55)	(18.85)	(15.81)	(16.69)	(17.46)	(21.11)	(10.51)
Labor Force	91.242	91.803	84.032	71.235	75.512	91.148	46.395	49.794	49.471	29.673	23.949	32.243
	(478.35)	(390.00)	(239.00)	(273.85)	(187.09)	(390.95)	(612.66)	(636.85)	(693.26)	(227.34)	(104.90)	(320.07)
Value-Added	1.546	6.386	9.305	8.304	16.737	12.160	0.397	1.538	1.630	1.872	2.606	2.097
	(8.37)	(88.64)	(120.51)	(97.43)	(111.76)	(149.21)	(2.45)	(50.97)	(35.22)	(44.31)	(63.62)	(45.71)
Observations	10713	12273	16997	21121	12231	15252	270404	267727	281138	285964	301696	306725

Table 1: This table presents summary statistics for key firm-level variables from 2016 to 2021, separately for firms that applied for the 5 percentage point tax rate reduction (applicants) and those that did not (non-applicants). The table shows sample averages for each variable, with standard deviations in parentheses. Applicants consistently report higher levels of taxable income, tax liability, gross profit, labor force, and value-added, reflecting substantial differences in scale and performance across the two groups.

Year	Elasticity	SE	t-stat
2016	0.17	0.20	0.85
2017	0.25	0.21	1.23
2018	1.56	0.73	2.14
2019	0.49	0.30	1.62
2020	2.01	0.70	2.89
2021	4.35	1.17	3.71
All Years	1.17	0.56	2.08

Table 2: Estimates of semi-elasticities computed using a modified version of the method proposed by Kleven and Waseem (2013).

Variables	Coefficient
T × RHS	-11.09***
RHS	-2.637
T	4.621
Constant	13.62***
Observations	69,237
R-squared	0.017

Table 3: Relationship between taxable income growth in annual corporate tax returns and value-added growth in VAT returns. *** indicates significance at the 1% level.