

# Cutting at the Firm or Shareholder Level? The Cross-Effects of Dividend Taxation on the Corporate Tax Base\*

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## Abstract

We compare the efficiency of corporate and dividend tax cuts in alleviating the double taxation of corporate income. Exploiting a double kink created by the 2006 Canadian dividend tax reform in a difference-in-bunching design, we find that dividend tax cuts induce a response in corporate taxable income close to 40% of that generated by corporate taxes, thereby reducing their fiscal cost through positive spillovers onto the corporate tax base. These advantages relative to corporate tax cuts, however, are attenuated once re-timing and relabeling of dividends into capital gains or owner wages are taken into account.

*Keywords:* Bunching estimation, Corporate taxation, Dividend taxation, Elasticity of taxable income, Small businesses, Tax integration, Marginal Value of Public Funds.

*JEL Classification:* H25.

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# 1 Introduction

Capital income produced by firms is typically taxed twice: first at the corporate level when profits are earned, and again at the shareholder level when profits are distributed as dividends. This “double taxation” of corporate income motivates recurring policy proposals to increase integration between corporate and personal income taxes so that a dollar of corporate profit faces a similar burden as a dollar earned directly as personal income (Hubbard, 1993, 2005; U.S. Department of the Treasury, 1992). In practice, tax integration can be implemented through different margins—either by lowering the corporate tax burden on profits or by reducing shareholder-level taxation of dividends. Because both instruments affect the overall tax wedge on equity income, policymakers face a natural question: is it more efficient to cut corporate taxes or dividend taxes when seeking to alleviate double taxation?

Indeed, governments frequently adjust corporate and dividend taxation, often through integration policies or related systems that rebalance corporate and shareholder taxation to equalize the taxation of capital income with personal income taxation (OECD, 2007). For instance, Australia, Canada, Chile, Colombia, Korea, Mexico, New Zealand, and the UK are among OECD countries that have some form of integration between corporate and personal income taxation. A prominent example is the 2006 Canadian dividend tax reform, which increased tax integration by reducing the effective dividend tax rate. Policymakers argued that lowering dividend taxation would strengthen incentives to save and invest and, more broadly, reduce distortions created by the double taxation of corporate-source income.<sup>1</sup>

Assessing whether the 2006 Canadian dividend tax cut alleviated double taxation more efficiently than a corporate tax cut requires measuring fiscal externalities—the feedback in tax revenues generated by behavioral responses to each tax instrument (Bastani, 2025; Hendren, 2016; Hendren and Sprung-Keyser, 2020)—rather than relying solely on mechanical revenue effects. Fiscal externalities can arise within the directly targeted base (own effects), but also through spillovers onto other tax bases (cross effects) driven by

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<sup>1</sup>The reform was introduced in the 2005 federal budget and implemented in 2006. Finance Minister Ralph Goodale stated that reducing the tax individuals pay on dividends will encourage savings and investment and improve the competitiveness of Canadian businesses. The measure was presented as part of the governments broader *Plan for Growth and Prosperity*. Although introduced by the Liberal government under Prime Minister Paul Martin, the reform was retained and subsequently expanded by the Conservative government elected in early 2006 under Stephen Harper, highlighting broad political support for dividend tax relief.

re-timing, relabeling, and reporting responses (Alstadsæter and Jacob, 2016; Bach et al., 2024; Berman and Klor, 2025; Coles et al., 2025; Jacob, 2021; Miller et al., 2024; Ohrn and Seegert, 2019).

While the own fiscal externalities of corporate and dividend taxation have been studied extensively, much less is known about the cross effects between shareholder-level taxation and the corporate tax base.<sup>2</sup> Indeed, these cross effects, measured by the respective elasticities of taxable income, and their comparison with own effects are central to the design of tax reforms: a change in dividend taxation may generate only modest responses in the dividend base while inducing economically meaningful distortions in reported corporate taxable income, implying that dividend tax cuts may be preferred to corporate tax cuts.

In this paper, we contribute to the study of fiscal externalities in the context of corporate and dividend taxation by estimating both the own-tax elasticity of corporate taxable income (ECTI) with respect to the corporate net-of-tax rate and its cross-tax elasticity with respect to shareholder-level dividend taxes for Canadian-Controlled Private Corporations (CCPCs). We find that corporate taxable income responds strongly to dividend taxes relative to corporate taxes: the elasticity with respect to the corporate net-of-tax rate is about 0.91 (s.e. 0.02), while the elasticity with respect to the dividend net-of-tax rate is 0.35 (s.e. 0.042).<sup>3</sup> To the best of our knowledge, this paper provides the first estimate of the cross-elasticity of corporate taxable income with respect to shareholder-level dividend taxation.

To obtain these estimates, we employ a difference-in-bunching design that leverages the 2006 Canadian dividend tax reform. In 2005, CCPCs faced a salient kink in the corporate tax schedule at \$300,000 of taxable income, where the marginal corporate tax rate rises discretely. The 2006 reform left the corporate schedule unchanged but introduced a new kink by lowering the marginal tax rate on dividends paid out of income earned above the same \$300,000 threshold. As a result, starting in 2006 the same cutoff simultaneously features a higher marginal corporate tax rate and a lower marginal dividend tax rate — a

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<sup>2</sup>For example, [Bachas and Soto \(2021\)](#); [Boonzaaier et al. \(2019\)](#); [Coles et al. \(2021\)](#); [Devereux et al. \(2014\)](#); [Lediga et al. \(2019\)](#); [Lobel et al. \(2021\)](#) estimate elasticities of corporate taxable income with respect to corporate net-of-tax rates, while [Chetty and Saez \(2005\)](#) estimates the responsiveness of dividend payouts to dividend taxation. Evidence on how dividend taxation affects corporate taxable income remains scarce.

<sup>3</sup>These estimates align with the findings of [Bernier and Perrault \(2023\)](#), who report that the ECTI with respect to the corporate net-of-tax rate ranges from 0.26 in New Brunswick to 1.43 in Alberta, with a median value of 0.79 for CCPCs at the \$500,000 threshold between 2010 and 2017.

double kink created by layering the dividend reform on top of the pre-existing corporate kink.<sup>4</sup>

This institutional design, which delivers corporate and dividend tax kinks at the same income threshold, is central to our identification strategy: it allows us to extend the bunching framework of [Goff \(2024\)](#) to a difference-in-bunching setting by exploiting the introduction of a dividend tax kink at an existing corporate kink. In this framework, excess mass at the kink reflects a reduced-form behavioral response that may combine real and avoidance margins; accordingly, we interpret our estimates as behavioral elasticities rather than structural parameters.

By comparing changes in bunching behavior at the same income threshold before and after the reform, we identify both own and cross responses of corporate taxable income to corporate and dividend taxation within a single setting and a well-defined population of firms. This institutional alignment yields a degree of comparability that is rarely available: in many countries, including the United States, corporate and shareholder tax changes do not align at a common firm-level income cutoff for the same firms, making it difficult to recover directly comparable elasticities from a single reform. In our setting, this comparability allows us to estimate that dividend tax cuts induce a response in corporate taxable income that is close to 40% of that generated by corporate tax changes.

We then study the policy implications of our estimated elasticities for tax integration using the Marginal Value of Public Funds (MVPF) framework ([Bastani, 2025](#); [Hendren and Sprung-Keyser, 2020](#)). In this framework, the welfare impact of a tax cut depends on both its mechanical revenue effect and the full set of fiscal externalities it induces. The dividend cross effect we estimate enters the fiscal-externality term in the MVPF and therefore affects the relative efficiency of corporate and dividend tax cuts. In the Canadian case, a corporate tax cut may elicit a strong own-base response, but it also entails a large mechanical revenue loss because it applies to the entire corporate tax base. By contrast, a dividend tax cut has a smaller mechanical cost and can partially finance itself through a positive spillover onto the corporate tax base when lower dividend taxation increases reported corporate taxable income.

Our welfare analysis yields clear implications for tax integration. In a no-shifting benchmark, as in [Swonder and Vergara \(2025\)](#) and [Lehmann and Zanoutene \(2026\)](#), dividend

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<sup>4</sup>Recent papers that also study CCPCs in the context of tax reforms include [Duan and Moon \(2024a\)](#) and [Duan and Moon \(2024b\)](#).

tax cuts are most attractive when dividends are small relative to corporate profits or when dividend payouts are sufficiently elastic with respect to dividend taxation. Allowing for shifting between dividends, capital gains, and wages attenuates this fiscal advantage: higher dividend payouts may largely reflect re-timing or relabeling, so contemporaneous dividend-base gains are offset by weaker future capital-gains realizations and lower payroll-tax revenue. When shifting primarily occurs through capital gains, dividend tax cuts are attractive only when firms distribute a relatively small share of taxable income as dividends. When shifting primarily occurs through owner wages, dividend tax cuts are preferred only if reductions in owner wages are offset by sufficiently large spillovers to workers wages. In this context, we extend and complement [Swonder and Vergara \(2025\)](#) and [Lehmann and Zanoutene \(2026\)](#) by incorporating relabeling responses into the welfare analysis of corporate taxation.

Finally, we relate our estimates to the classic old-view versus new-view debate on dividend taxation. The old view emphasizes that dividend taxes affect the user cost of capital and real investment decisions ([Feldstein, 1970](#); [Harberger, 1962](#); [Poterba and Summers, 1983](#)). By contrast, the new view argues that marginal investment is financed out of retained earnings, so that investment remains neutral to dividend taxes ([Auerbach, 1979](#); [Bradford, 1981](#); [King, 1977](#); [Sinn, 1991](#)). Empirical work following the 2003 U.S. dividend tax reform has produced mixed evidence, documenting null investment responses ([Yagan, 2015](#)) alongside a sharp and rapid increase in dividend payouts, with interpretations ranging from agency-driven payout responses ([Chetty and Saez, 2005](#)) to support for the new view once mergers and acquisitions are taken into account ([Coles et al., 2025](#); [Ohrn and Seegert, 2019](#)).

In this context, our results may serve as an indirect test of pure new-view behavior. When our elasticities reflect any degree of real responses, a firm whose investment is insensitive to dividend taxation should not exhibit increases in corporate taxable income following dividend tax cuts. This prediction is inconsistent with our finding of a positive elasticity of corporate taxable income with respect to the dividend net-of-tax rate. One interpretation is that this evidence is consistent with a mixed environment in which old-view and new-view firms coexist in the cross section. As emphasized by [Korinek and Stiglitz \(2009\)](#), firms may transition between financing regimes over their life cycle, allowing dividend taxes to affect reported corporate income even when aggregate payout responses are muted. An alternative interpretation is that shareholder-level taxation operates through margins beyond investment. Dividend taxes may influence reporting, re-timing, and

organizational choices that directly affect the corporate tax base. Taken together, these mechanisms suggest that reconciling our results with theory may require an augmented version of the new view in which dividend taxation generates cross-base responses even in the absence of strong investment effects.

**Related literature.** Our paper contributes to three strands of the public finance literature. First, it contributes to the empirical literature on dividend taxation. While theoretical interest in this area is long-standing, empirical work on the effects of dividend taxes on firm behavior is relatively recent. The 2003 dividend tax reform in the United States sparked a wave of research, with numerous studies examining its impact on firm-level outcomes such as dividend payouts and investment behavior ([Chetty and Saez, 2005](#); [Coles et al., 2025](#); [Edgerton, 2013](#); [Ohrn and Seegert, 2019](#); [Yagan, 2015](#)). In addition, a growing body of empirical work analyzes the effects of direct dividend tax reforms, including studies for Sweden ([Alstadsæter and Jacob, 2016](#); [Alstadsæter et al., 2017](#); [Jacob, 2021](#)), France ([Bach et al., 2024](#); [Matray, 2022](#)), the United Kingdom ([Kontoghiorghes, 2024a](#)), Greece ([Bilicka et al., 2025](#)), and Israel ([Berman and Klor, 2025](#)).

In this context, the novelty of our work lies in its institutional setting: Canada's integration system, in which the effective dividend tax rate is affected by changes in dividend tax credits linked to corporate taxes paid on distributed profits. This context allows us to revisit the old- versus new-view debate by comparing the response of corporate taxable income to changes in dividend taxes with the response to changes in the corporate tax rate. We find that dividend tax cuts induce a response in corporate taxable income close to 40% of that generated by corporate taxes. From this perspective, our results are consistent either with heterogeneity across firms in financing regimes, combining old-view and new-view behavior, or with a modified new-view framework in which dividend taxation affects reported corporate earnings through non-investment margins, such as payout and reporting choices. This view is similar in spirit to the models in [Ohrn and Seegert \(2019\)](#) and [Coles et al. \(2025\)](#), where tax wedges influence payout behavior without operating through firms internal investment decisions.

Second, our paper relates to the literature on the efficiency of tax integration and capital taxation. It is often argued that double taxation may create incentives for tax sheltering and planning strategies that divert resources away from productive activities ([Agostini et al., 2018](#); [Hubbard, 1993](#); [Slemrod and Bakija, 2004](#)). To address these inefficiencies, many countries have implemented tax integration mechanisms aimed at taxing corporate income

only once. Indeed, the economic rationale for integration has featured prominently in U.S. policy discussions. For instance, the 1992 U.S. Treasury Report titled "Integration of the Individual and Corporate Tax Systems" laid out a framework for aligning corporate and personal taxation (Hubbard, 1993, 2005; U.S. Department of the Treasury, 1992). These ideas informed the 2003 U.S. tax reform where the dividend tax rate was substantially reduced, decreasing the burden of double taxation (Burman et al., 2017). Our contribution lies in offering the first empirical estimates on whether a higher degree of tax integration should be achieved either via a reduction in corporate or dividend taxes. Moreover, our estimated elasticities can be used as inputs in the novel optimal capital taxation theory (Berg, 2025; Lehmann and Zanoutene, 2026; Swonder and Vergara, 2025).<sup>5</sup> In this regard, our estimated ETI and ratio of elasticities can be used as a sufficient statistics to characterize the optimal mix of corporate and dividend tax rates.

Finally, we contribute to the literature on the estimation of the elasticity of taxable income by extending the bunching framework to a difference-in-bunching design. The bunching approach originates in Saez (2010), who develops a structural model to recover labor supply elasticities from kinks in personal income tax schedules. Subsequent applications and extensions, including Chetty et al. (2011), broadened its empirical scope, while later work highlighted the limited identifying power of the bunching estimator (Bertanha et al., 2023; Blomquist et al., 2021). More recently, Goff (2024) revitalizes the bunching method by recasting it as a reduced-form causal response within a potential outcomes framework, thereby weakening the structural assumptions required for identification and delivering partial identification under partially testable assumptions on counterfactual income distributions. Building on these insights, we extend the bunching framework to a setting with multiple tax instruments that generate a double kink at a common threshold. This difference-in-bunching design allows us to separately identify the response of corporate taxable income to corporate and dividend taxation.

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<sup>5</sup>Indeed, Lehmann and Zanoutene (2026) develop a framework in which the optimality of corporate taxes relative to the dividend taxes yields an analytical condition that depends on the ratio of the ECTIs with respect to both dividend and corporate keep rates, i.e., the ratio of our estimated objects.

## 2 The Canadian corporate tax system and the 2006 tax reform on dividend taxation

In this section, we describe the institutional features of firm taxation in Canada. We begin by outlining the corporate income tax system faced by Canadian firms. We then discuss the taxation of dividends at the shareholder level and the integration of corporate and personal taxes through the dividend tax credit mechanism. Finally, we describe the 2006 tax reform, which reduced the effective tax rate on dividends by increasing the dividend tax credit associated with corporate taxes previously paid by firms.

### 2.1 Canadian corporate tax system

In Canada, firms pay corporate taxes depending on their structure, assets and location. Publicly traded and foreign-controlled firms pay the general business tax rate on all of their profits generated through active income.<sup>6</sup> In contrast, Canadian controlled private corporations (CCPCs) with less than \$15 million<sup>7</sup> in taxable capital pay the substantially lower “small business tax rate” on active income up to the prescribed federal threshold — active income in excess of this threshold is taxed at the general rate.<sup>8</sup> This discounted tax rate is called the small business deduction (SBD).<sup>9</sup>

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<sup>6</sup>Following the Income Tax Act s. 125(7): Income from most businesses qualifies as active business income. However, active business income does not include investment income, income from a specified investment business, or income from a personal services business. Investment income, which is excluded from active business income, includes taxable capital gains less allowable capital losses, property income less property losses, and foreign business income. For the majority of firms, active income is similar to taxable income.

<sup>7</sup>The \$ symbol denotes Canadian dollars (CAD) unless stated otherwise.

<sup>8</sup>A firm is a Canadian Controlled Private Corporation if the following conditions met: i) it is a private corporation, ii) it is a corporation that resides in Canada and was either incorporated in Canada or resident in Canada from June 18, 1971, to the end of the tax year, iii) it is not controlled directly or indirectly by one or more non-resident persons, iv) it is not controlled directly or indirectly by one or more public corporations (other than a prescribed venture capital corporation, as defined in Regulation 6700 of the Income Tax Regulations), v) it is not controlled by a Canadian resident corporation that lists its shares on a designated stock exchange outside of Canada vi) it is not controlled directly or indirectly by any combination of persons described in the three previous conditions, vii) if all of its shares that are owned by a non-resident person, by a public corporation (other than a prescribed venture capital corporation), or by a corporation with a class of shares listed on a designated stock exchange were owned by one person, that person would not own sufficient shares to control the corporation, viii) no class of its shares of capital stock is listed on a designated stock exchange.

<sup>9</sup>The SBD is applicable for firms whose taxable capital is lower than \$15 million, but it is reduced in a straight line base when the taxable capital higher than \$10 million. In addition, for a legal definition of taxable capital, refer to Income Tax Act (R.S.C., 1985, c. 1 (5th Supp.))

To illustrate how this corporate tax schedule operates, consider a CCPC that declares \$200,000 in active income. This firm pays \$37,240 in taxes as only the small business tax rate (the corporate tax rate after applying the small business deduction) is applied to its active income. In contrast, a CCPC entitled to the small business deduction that declares \$400,000 in active income firm must pay \$55,860 + \$27,620 in corporate taxes (i.e.,  $\$300,000 \times 18.62\%$  and  $\$100,000 \times 27.62\%$ ). Importantly, this tax system produces a kink due to the discontinuity in the marginal tax rate at the SBD threshold. This kink, in turn, generates incentives for tax planning since some firms may locate close to the left of the threshold to avoid the payment of the general tax rate. Theoretically, we should observe bunching close to the federal threshold.

## 2.2 Canadian dividend tax system

Since 1949 the Canadian tax system has been partially integrated, meaning that a dividend tax credit is given to shareholders when they receive their post corporate tax dividends from the firm. Under an integrated tax system, dividends are taxed at a lower tax rate to make the combined corporate and dividend tax rate close to the personal tax rate on other forms of income.

Since 1972, Canadian integration has been achieved through a “gross-up-and-credit” system that aims to reduce double taxation while fully taxing the underlying corporate income at each shareholder’s own personal marginal tax rate.<sup>10</sup> Integration thus works in two steps: (i) A gross-up rate  $(1 + g)$  is applied to the after-corporate-tax dividend amount, (ii) A dividend tax credit is applied to the grossed-up amount. The final amount is the dividend tax credit (DTC), and the total dividend tax paid is the personal tax rate multiplied by the grossed up level of dividends minus the DTC. We summarize the relevant tax parameters for 2005 in columns (1) and (2) of Table 1.

As indicated by columns (1) and (2) in Table 1, there was a kink in the corporate tax schedule in 2005, with the marginal corporate tax rate increasing from 18.62% to 27.62% at 300,000 CAD of active income. Additionally, Table 1 reveals that the effective tax rate on equity in 2005 was slightly higher than the top marginal tax rate on personal income,

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<sup>10</sup>The Canadian tax system features “notional” integration between corporate and personal taxes. Under this system, the dividend tax credit reflects a notional amount of corporate tax that is assumed to have been paid at the statutory rate, rather than the firms actual corporate tax liability. This contrasts with full imputation (or “frankin”) systems—such as those in Australia or Taiwan—where dividend credits are explicitly linked to corporate taxes actually paid.

Table 1: Statutory marginal tax and credit rates before and after the 2006 reform

Tax parameters	<i>Taxable income bracket</i>			
	2005		2006	
	< 300000 (1)	≥ 300000 (2)	< 300000 (3)	≥ 300000 (4)
<i>Corporate tax schedule parameters</i>				
Federal corporate tax rate ( $\tau_c^F$ )	13.12%	22.12%	13.12%	22.12%
Provincial corporate tax rate ( $\tau_c^P$ )	5.50%	5.50%	5.50%	5.50%
<b>Corporate tax rate</b> ( $\tau_c = \tau_c^F + \tau_c^P$ )	18.62%	27.62%	18.62%	27.62%
<i>Personal tax schedule parameters</i>				
Federal personal tax rate ( $\tau_p^F$ )	29.00%	29.00%	29.00%	29.00%
Provincial personal tax rate ( $\tau_p^P$ )	13.92%	13.92%	13.92%	13.92%
Personal tax rate ( $\tau_p = \tau_p^F + \tau_p^P$ )	42.92%	42.92%	42.92%	42.92%
<i>Dividend credit schedule parameters</i>				
Federal dividend tax credit ( $\lambda^F$ )	13.33%	13.33%	13.33%	18.97%
Provincial dividend tax credit ( $\lambda^P$ )	5.13%	5.13%	5.13%	6.50%
Dividend tax credit ( $\lambda = \lambda^F + \lambda^P$ )	18.46%	18.46%	18.46%	25.47%
Gross-up rate ( $g$ )	25.00%	25.00%	25.00%	45.00%
<b>Effective dividend tax rate</b> ( $\tau_d = [\tau_p - \lambda][1 + g]$ )	30.57%	30.57%	30.57%	25.31%
Effective tax rate on equity ( $\tau_e = \tau_c + [1 - \tau_c]\tau_d$ )	43.50%	49.75%	43.50%	45.94%

*Note:* This table presents the statutory marginal tax and credit rates applicable to CCPCs and their shareholders before and after the 2006 reform. Columns (1) and (2) correspond to the 2005 tax regime for income below and above 300,000 CAD, respectively, while columns (3) and (4) report the same brackets after the 2006 system. All rates are sourced from the Canadian Tax and Credit Simulator and *Finances of the Nation*. Provinces such as British Columbia, Alberta, Manitoba, and Ontario applied a provincial corporate tax kink at 400,000 CAD in 2005-2006, while Quebec implemented a kink at 400,000 CAD in 2006. Because our kink of interest lies at 300,000 CAD, below the provincial threshold, the applicable federal corporate tax rate remains constant across brackets. We adopt Ontario's 5.5% provincial rate as it is not only representative of the largest provinces that feature the 400,000 CAD kink, but also because Ontario itself is the largest province by economic activity and firm count. For personal taxes, we assume that shareholders face the top marginal personal income tax rate, yielding a combined federal-provincial rate of 42.92% according to *Finances of the Nation* 2005, and an implied personal tax rate of 13.92% after accounting for dividend gross-up and credits. For the provincial dividend tax credit, we again adopt Ontario's rate, which is broadly consistent with other large provinces. Lastly, we note that there was no province-specific gross-up rate during this period.

suggesting a small degree of underintegration for active income below the SBD threshold. In contrast, column (2) shows that the effective tax rate on equity for the general business bracket exceeded the top marginal tax rate on personal income, implying only partial integration for active income above the SBD threshold.

### **2.3 The 2006 tax reform**

In November 2005, a major dividend tax reform was announced and subsequently implemented in 2006. The primary objective was to increase the integration rate for firms paying the general corporate tax rate. To achieve this, the reform introduced the concept of “eligible” dividends to distinguish between dividends entitled to higher dividend tax credits (DTCs) and those that receive lower DTCs due to being paid from income taxed at the small business tax rate.

An “eligible” dividend is paid from active income exceeding the federal threshold and qualifies for a higher DTC, whereas a “non-eligible” dividend, paid from active income below the threshold, receives a DTC aligned with the small business tax rate. To differentiate between “eligible” and “non-eligible” dividends issued by CCPCs, a new tax form, Schedule 55, was created. This form contains the General Rate Income Pool (GRIP), which tracks the amount of eligible dividends that a CCPC can issue in a given year. Small firms may only pay eligible dividends up to the amount recorded in their GRIP. If a CCPC issues eligible dividends beyond this limit, an additional tax is imposed on the excess. Notably, the introduction of eligible dividends and the GRIP was unannounced, and eligible dividends could be retroactively tracked back to 2001 using the GRIP account.

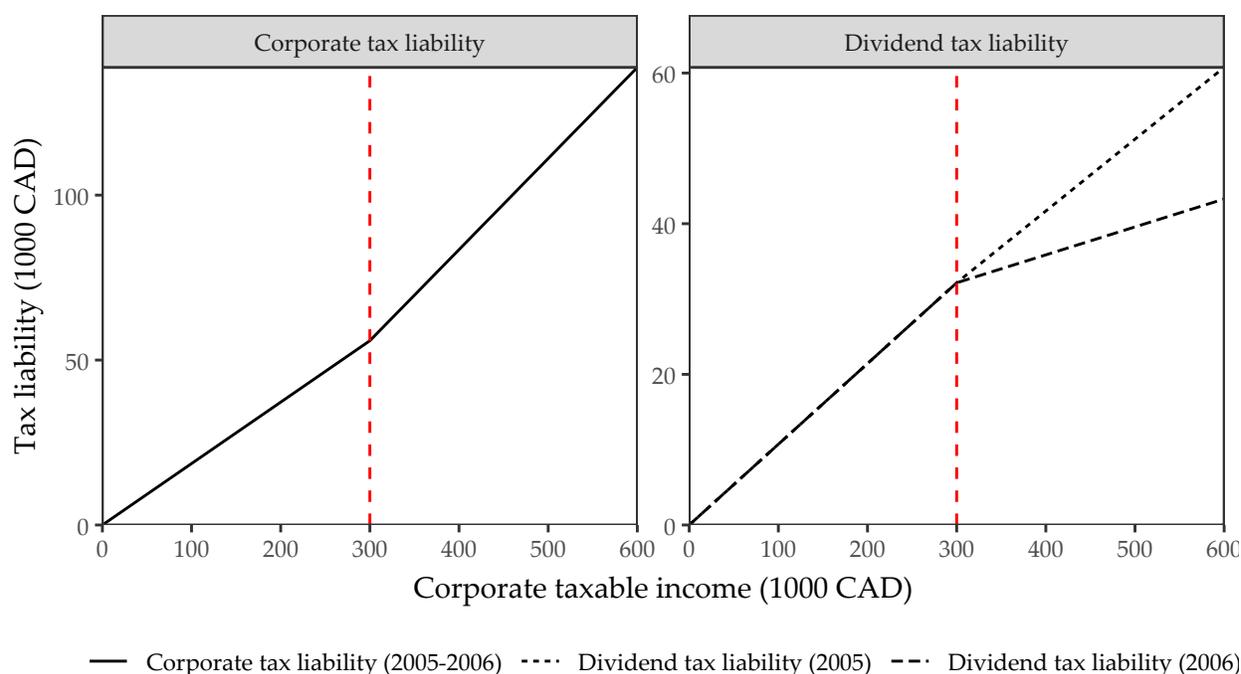
As shown in column (4) of Table 1, the reform increased both federal and provincial DTCs, as well as the gross-up rate for shareholders of large corporations (non-CCPCs). The combined effect of the higher DTCs and gross-up rate resulted in a reduction of the marginal dividend tax rate for active income exceeding the Small Business Deduction (SBD) threshold. Specifically, the effective marginal dividend tax rate dropped from 30.57% to 25.31% for taxable profits above 300,000 CAD, creating a non-convex kink in the

dividend tax schedule for dividends paid from active income above the threshold.<sup>11</sup>

## 2.4 The Canadian integrated corporate tax system in a nutshell

We present Figure 1, which summarizes how the tax system integrated corporate and dividend taxes for CCPCs in 2005 and 2006. The left panel depicts the corporate tax schedule, while, the right panel depicts how the dividend tax reform affected effective dividend taxation. The left panel from Figure 1 shows the piecewise linear corporate tax schedule

Figure 1: Corporate and dividend tax rate scheme for CCPCs in 2005 and 2006.



*Note:* This figure presents the corporate and dividend tax schedules for CCPCs in the left and right panels, respectively. To illustrate the dividend tax scheme, we assume that firms distribute all net-of-tax active income as dividends. The left panel shows a convex kink in the corporate tax schedule, which remains unchanged in 2005-2006. The right panel displays the linear dividend tax schedule in 2005, indicated by the dashed line. The short-dashed line represents the new schedule after the 2006 reform, which exhibits a non-convex kink: dividends paid from active income in excess of 300,000 CAD face a lower effective personal marginal tax rate.

<sup>11</sup>Registered Retirement Savings Plans (RRSPs) are tax-deferred retirement accounts in which contributions are deductible and investment returns, including dividends, accumulate tax-free until withdrawal, while Tax-Free Savings Accounts (TFSA)—introduced in 2009, after the reform we analyze—allow investment income and withdrawals to be fully tax-free subject to relatively low contribution limits. These features are unlikely to materially affect our estimates because RRSP contribution limits were stable and relatively low in 2005-2006, primarily affecting small- and medium-scale investors rather than marginal investors at the income and profit levels relevant for firms bunching at the small-business threshold.

for the year 2005, when the SBD threshold was set at \$300,000, the federal and provincial combined “small business tax rate” was 0.1862, and the federal and provincial combined general rate was 0.2762. This tax structure remains constant during 2006 meaning that there is no change in the corporate tax system or the \$300,000 threshold. Moreover, as we can see in the right panel from Figure 1, the 2006 tax reform creates a non-convex kink in the dividend tax liability. This means that in 2006 there are two kinks in the same threshold. The convex corporate tax kink and the non-convex dividend tax kink.

The retroactive application of GRIP to active income reported as far back as 2001 may raise concerns about the existence of a pure kink, since it introduces the possibility of a fuzzy kink that depends on the accumulated GRIP balance. But in our analysis, we focus on investment decisions — that is, how much to earn or report in taxable income — and in that context, a dollar of active business income qualifies for the reduced dividend tax rate only if it enters the GRIP. To be included in the GRIP, however, income must have been taxed at the general corporate rate, which only occurs above the federal threshold where the SBD no longer applies. Thus, even though GRIP can be accumulated retroactively, it does not alter marginal incentives at the point of income generation: the lower dividend tax rate applies only to income above the threshold.<sup>1213</sup>

In summary, the presence of a single kink in 2005 and a double kink at the same threshold following the 2006 dividend tax reform generates sharp incentives that can be exploited using bunching methods. These kinks allow us to separately estimate the elasticity of taxable income with respect to the net-of-corporate tax rate and the net-of-dividend tax rate. Indeed, Figure 2 compare firms’ density pre- and post-reform based on taxable income reported in their 2005s tax return, filled before the reform, and in their 2006s tax return, filled after the adoption of the reform.

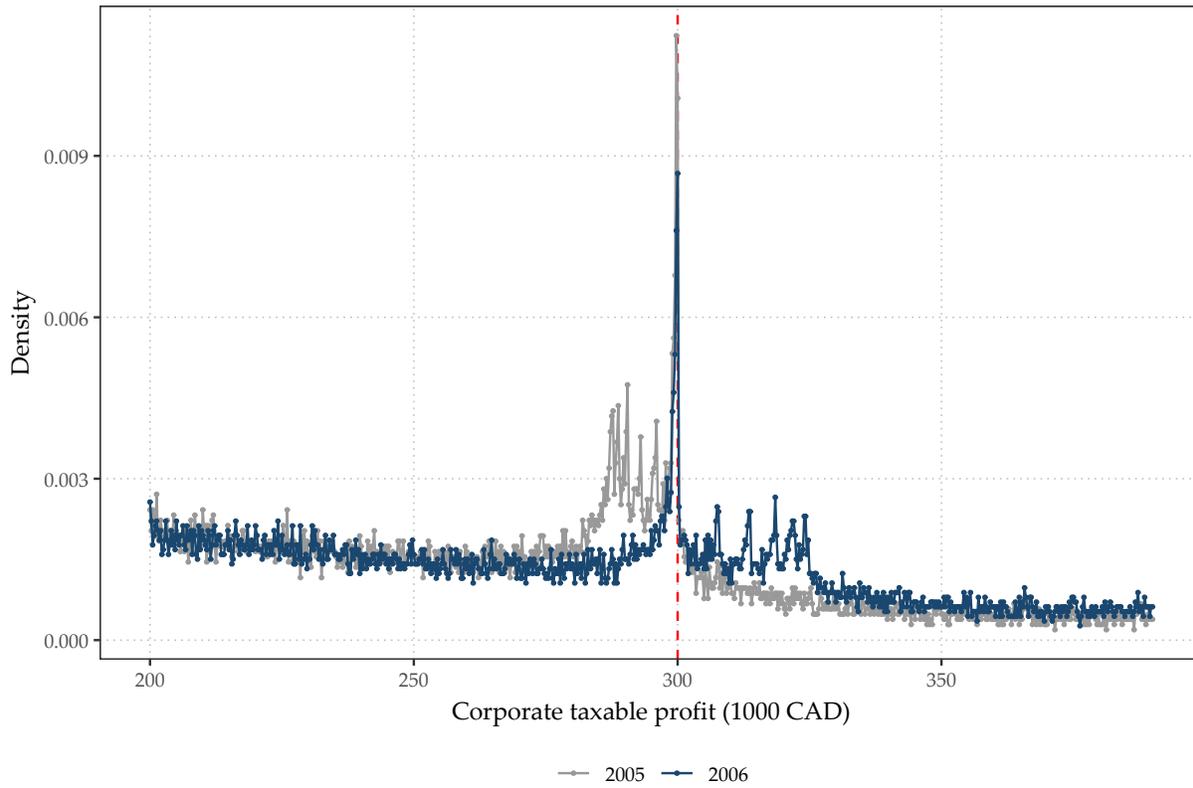
The pre-reform distribution (gray curve) displays pronounced bunching at the small business deduction (SBD) threshold. After the 2006 reform—which increased corporate-dividend tax integration for large corporations—the extent of bunching at this threshold is substantially reduced (blue curve). This change is consistent with an immediate behavioral response of taxable income to the reduction in dividend taxation. The next section formalizes the identifying assumptions for each elasticity in the Canadian setting

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<sup>12</sup>An exception arises when taxable income is generated from passive sources, such as dividends received from other corporations. Since passive income is not eligible for the SBD, a corporate-level kink exists only if the firm also earns active income above the threshold.

<sup>13</sup>Nonetheless, GRIP may affect firms’ decision to distribute dividends. This is, however, beyond the scope of the present work which focuses on active income.

Figure 2: Lower effective dividend taxes causes an immediate response by firms



*Note:* This figure shows the distribution of CCPCs' taxable income around the 300,000 CAD threshold, depicted by a red vertical line, that determines access to the Small Business Deduction (SBD). Bin size is 250 CAD, with the grey curve depicting the distribution of taxable income reported in 2005, before the reform, and the blue curve showing the same distribution in 2006, after the reform was enacted. The sharp excess mass in 2005 reflects clear bunching behavior at the kink in the corporate tax schedule. Following the 2006 reform, which reduced the effective dividend tax rate for firms above the threshold, the excess mass sharply declines. The data are drawn from the T2 Corporation Income Tax Return (line 360).

and describes the estimation procedure used on Canadian tax data, incorporating the institutional details described so far.

## 3 Identification and estimation

### 3.1 Identification strategy

Our identification strategy relies on bunching at tax kinks, first proposed by [Saez \(1999\)](#) as a method to estimate elasticities of taxable income. In Saez's framework, excess mass at a kink is proportional to the responsiveness of taxable income to changes in marginal

tax rates, allowing elasticities to be recovered from observed bunching behavior.

Concretely, we exploit the Canadian corporate tax system and the 2006 dividend tax reform to estimate the elasticity of corporate taxable income with respect to both the net-of-corporate tax rate and the net-of-dividend tax rate. In 2005, the corporate tax schedule featured a discrete increase in the marginal corporate tax rate at the small-business profit threshold, generating bunching as firms adjusted taxable profits to locate at that point. In that year, dividend taxation was locally linear at the threshold, so observed excess bunching reflected only incentives created by the corporate tax kink.

The 2006 reform reduced the effective marginal tax rate on dividends paid from corporate earnings above the same threshold, while leaving the corporate tax schedule unchanged. This dividend tax cut partially offset the increase in the corporate tax burden above the threshold, weakening the incentive to locate there. As a result, bunching at the threshold declined after the reform. Because corporate tax incentives were identical before and after the reform, the change in excess bunching across the two regimes isolates the response of taxable profits to dividend taxation, holding fixed the corporate tax environment. In this sense, our approach extends traditional bunching methods (Chetty et al., 2011; Saez, 1999) by using differences in bunching across tax regimes to disentangle the effects of multiple tax incentives operating at a common threshold.

As emphasized by Feldstein (1999), these elasticities capture responses of taxable income along all behavioral margins, including real adjustments as well as reporting or avoidance behavior. Following Agostini et al. (2025), we therefore do not interpret our estimates as structural parameters and do not impose the parametric assumptions typically required for a structural interpretation in standard bunching frameworks (Kleven, 2016; Saez, 2010).

Instead, we adopt the identification framework developed by Goff (2024), which provides a reduced-form causal interpretation of bunching under weak assumptions on agents decision problems.<sup>14</sup> Identification relies only on convex preferences and does not require specifying the behavioral margins underlying bunching. As a result, this framework may accommodate multiple responses—including real adjustments, extensive-margin shifts, tax avoidance, or regime switching—while remaining agnostic about the underlying structural model. This generality is particularly important in our setting, as closely held firms may adjust along multiple margins in response to dividend taxation. By relying on Goff's

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<sup>14</sup>In contrast to traditional bunching approaches, Goff's framework explicitly relates bunching to reduced-form income responses. Nonetheless, Goff shows that this average causal response can be interpreted as a weighted average of the local structural effect.

framework, we recover policy-relevant elasticities of taxable profits without a particular structural interpretation.

To fix ideas, let  $\pi_{it}$  denote taxable profits generated by firm  $i$  in period  $t$ , where  $t = 0$  and  $t = 1$  index the pre- and post-reform years, respectively. Let  $\pi^*$  denote the fixed kink threshold, and let  $\tau_0^c$  and  $\tau_1^c$  denote the marginal corporate tax rates below and above the kink. We focus on the pre-reform year,  $t = 0$ , and describe two sufficient conditions under which the corporate tax response is identified.<sup>15</sup> First, we assume that treatment effects are homogeneous in logs for firms that bunch at the kink.<sup>16</sup> Let  $B_0$  denote the observed excess mass at  $\pi^*$  in year  $t = 0$ , let  $f_0(u)$  denote the counterfactual density of taxable profits under the low-tax linear schedule, and let  $\Delta^c \pi_0^*$  denote the income response of the marginal buncher. Under log-homogeneity, the bunching mass can be summarized by a single marginal income response, yielding the standard bunching equation

$$B_0 = \int_{\pi^*}^{\pi^* + \Delta^c \pi_0^*} f_0(u) du.$$

Second, we assume stationarity of the counterfactual distribution of taxable income around the kink.<sup>17</sup> This allows us to replace the unobserved density  $f_0(u)$  with the empirical distribution of taxable profits observed in 2009–2016, a period in which the kink was located well above \$300,000 and firms therefore effectively faced a linear corporate tax schedule. Under these conditions, the corporate income response for 2005 is identified, yielding the following behavioral elasticity of taxable profits with respect to the corporate net-of-tax rate:

$$\epsilon_{1-\tau_c} = \frac{\Delta^c \log \pi_0}{\log \left( \frac{1-\tau_0^c}{1-\tau_1^c} \right)}.$$

Finally, to obtain identification of the dividend tax effect, we rely on an additional assumption: time invariance of the corporate earnings response, i.e.,  $\Delta^c \log \pi_0 = \Delta^c \log \pi_1$ . Let  $\Delta^d \log \pi_1$  denote the dividend-tax response in the post-reform year, and let  $\Delta^{cd} \log \pi_1$  denote the joint response to both the corporate and dividend kinks at the same threshold.

<sup>15</sup>These conditions correspond to formal assumptions stated in Appendix B.

<sup>16</sup>This assumption implies that the policy parameter in logs is equal for all bunchers. Moreover, under this assumption, identification is akin to the isoelastic model but without defining the exact optimization problem.

<sup>17</sup>We provide extensive evidence in Section B supporting the stationarity assumption, including exercises using alternative years and thresholds. Moreover, both log-homogeneity and stationarity can be relaxed at the cost of yielding partial rather than point identification; Appendix B discusses these extensions and reports corresponding bounds.

Because in the post-reform period we only observe the combined effect of the two tax instruments, observed bunching reflects the joint response to the corporate and dividend kinks. Under the first two assumptions, this joint response,  $\Delta^{cd} \log \pi_1$ , can be related to the observed bunching mass  $B_1$  in the same manner as the corporate response was related to  $B_0$ . Time invariance of the corporate response then allows us to isolate the dividend tax effect using a difference-in-bunching design, which yields the following behavioral elasticity:

$$\epsilon_{1-\tau_d} = \frac{\Delta^c \log \pi_0 - \Delta^{cd} \log \pi_1}{\log\left(\frac{1-\tau_{d,1}}{1-\tau_{d,0}}\right)} = \frac{\Delta^d \log \pi_1}{\log\left(\frac{1-\tau_{d,1}}{1-\tau_{d,0}}\right)}.$$

Together, these steps deliver point identification of the dividend tax elasticity using variation in bunching across time.

## 3.2 Estimation

Estimation of the elasticities requires estimating both the bunching mass and the counterfactual density of taxable income. In principle, estimation of the bunching mass is straightforward under sharp bunching with perfect manipulation, as it can be obtained directly by computing the point mass at the kink. In practice, however, bunching is diffuse, which necessitates an alternative estimation approach. We follow the approach first proposed by [Chetty et al. \(2011\)](#) and [Saez \(2010\)](#), which computes the bunching mass as the excess number of firms relative to a counterfactual low-tax linear schedule.<sup>18</sup> However, rather than relying on polynomial or linear extrapolation, a practice that has attracted substantial criticism ([Bertanha et al., 2023](#); [Blomquist et al., 2021](#)), we rely on an empirical counterfactual,  $\hat{f}_{0,s}$ , drawn from a post-reform year in which the kink was located at \$500,000. This approach is similar in spirit to [Londoño-Vélez and Ávila Mahecha \(2024\)](#), [Gelber et al. \(2020\)](#), [Bertanha et al. \(2024\)](#), and [Coles et al. \(2021\)](#).<sup>19</sup>

Concretely, we approximate the distribution using a histogram, dividing the support into bins of width  $\kappa$ . Let  $c_j$  denote the number of firms in bin  $j$ . We then construct counterfactual counts,  $\hat{c}_j$ , using the empirical distribution from 2010, a post-reform year

<sup>18</sup>We also employ a filter to the observe cumulative distribution function in order to recover the frictionless sharp bunching distribution, in line with [Bertanha et al. \(2021\)](#). These estimates are presented in Section B, showing the robustness of our result.

<sup>19</sup>This estimation approach is consistent with our identification strategy, which assumes that the shape of the underlying probability density function is stationary and unaffected by the tax reform. We provide supporting evidence for this assumption and estimate the elasticities using alternative years in Section B, showing that our results are robust.

in which the relevant bunching threshold is located at \$500,000.<sup>20</sup> Let  $\pi_{min}$  and  $\pi_{max}$  denote the minimum and maximum middle values across all bins. We then compute the share and counterfactual share of firms within each bin:

$$p_j = \frac{c_j}{\sum_{i=\pi_{min}}^{\pi_{max}} c_j}, \quad \hat{p}_j = \frac{\hat{c}_j}{\sum_{i=\pi_{min}}^{\pi_{max}} \hat{c}_j}. \quad (1)$$

Then, our estimate of bunching is given by the excess mass between the observed and counterfactual bin counts within bunching window, i.e.,

$$\hat{B} = \sum_{j=\pi_l}^{\pi_u} (p_j - \hat{p}_j)$$

where  $[\pi_l, \pi_u]$  denotes the bunching window, which is first selected through visual inspection.

Next, having obtained the bunching mass, we compute the taxable income response by using the discrete analogue of the integral equation from Proposition 3, in line with Coles et al. (2021). Concretely,  $\widehat{\Delta\pi}$  is chosen by minimizing

$$\min_{\Delta\pi} \left( \sum_{j=\pi^*}^{\pi^*+\Delta\pi} \hat{p}_j - \hat{B} \right)^2$$

We apply this process to firm counts in the year 2005 and 2006, obtaining taxable income responses  $\widehat{\Delta \log \pi_0}$  and  $\widehat{\Delta \log \pi_1}$ , which in turn allow us to obtain our implied behavioral elasticities. Finally, standard errors are computed using a bootstrap resampling approach in line with Londoño-Vélez and Ávila Mahecha (2024).

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<sup>20</sup>Ideally, a pre-reform year would serve as the counterfactual. However, our data span the years 2001–2004, during which the corporate tax schedule featured a kink between \$200,000 and \$250,000. The presence of this earlier kink renders these years unsuitable as a counterfactual for the \$300,000 kink introduced in 2005. As a robustness check, we also estimate the counterfactual using the polynomial approach popularized by Chetty et al. (2011), and find that our results remain robust.

## 4 Empirical results

### 4.1 Data

We use administrative data from the T2 Corporation Income Tax Return Form, which contains tax information for all businesses in Canada. The information is contained at the business number level (line 001 on the T2 tax reform). Additionally, we have access to the firm's province (line 016) and taxable income (line 360) as our focus is estimate the ECTI. In this, we follow [Duan and Moon \(2024a\)](#) who define the eligibility for the SBD using taxable income.<sup>21</sup> Information on firms' labor inputs, such as number of employees, is provided by the Longitudinal Employment Analysis Program (LEAP) database, which includes annual employment information for each employer in Canada, starting with the 1983 reference year. The information in LEAP is generated from the annual statements of remuneration paid (T4 slips) that Canadian businesses are required to issue to their employees for tax purposes. The LEAP covers incorporated and unincorporated businesses that issue at least one T4 slip in any given calendar year but excludes self-employed individuals or partnerships where the participants do not draw salaries.

### 4.2 Stationarity of the counterfactual distribution

As discussed previously, our identification and estimation strategy hinge on a stationarity assumption for the counterfactual income distribution  $g(v)$ .<sup>22</sup> Figure 3 provides evidence for the plausibility of this assumption by plotting the distribution of taxable income for the years 2009-2016.

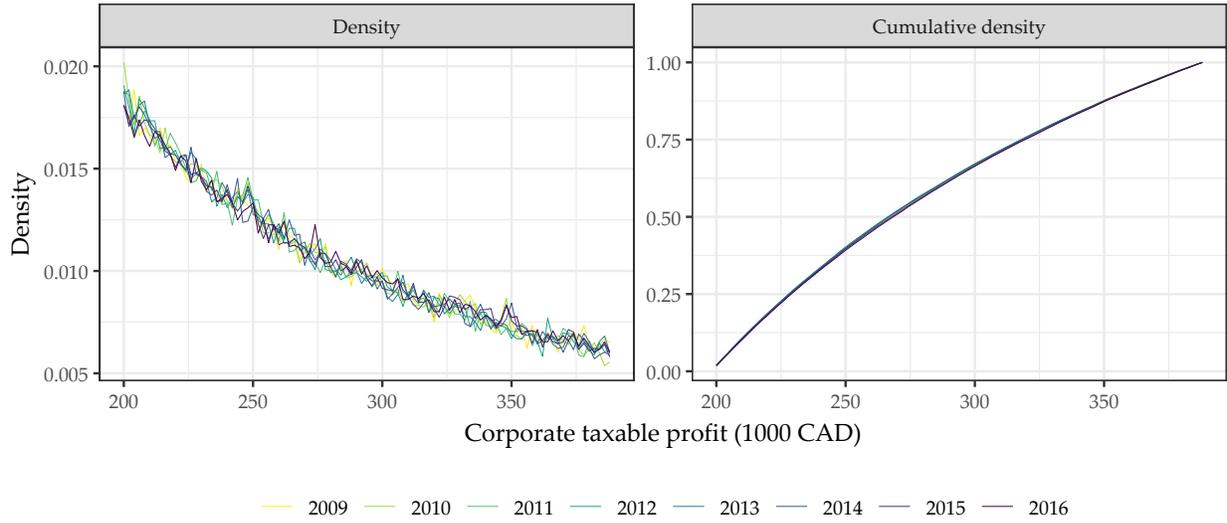
The left panel from Figure 3 plots the distribution of taxable income for each year in the 2010-2016 period for the [\$200,000; \$390,000] interval, while the right panel plots the cumulative distribution of taxable income. Importantly, for these years this interval was kinkless, which allows us to test our key identification assumption. These figures suggest that the distribution of corporate taxable income remains fairly stable across years. In particular, Figure 3 shows that the absolute distances between the cumulative distributions are extremely small, implying that we cannot reject the hypothesis that the

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<sup>21</sup>Taxable income serves as a proxy for income from active business activities carried on in Canada (line 400). Indeed, if some firms exhibit bunching in their taxable income, this behavior is driven by active income, as the Small Business Deduction (SBD) does not apply to passive income.

<sup>22</sup>For more technical details regarding the identifying assumptions refer to the Appendix.

Figure 3: Distribution of taxable income for 2010-2016



*Note:* This figure assesses the stationarity of the counterfactual distribution of taxable income by plotting the distribution and cumulative distribution of corporate taxable income for CCPCs from 2009 to 2016, shown in the left and right panels, respectively. A bin size of \$2,000 is used to reduce noise in the construction of the empirical distribution. We omit the years 2007 and 2008 due to the presence of a kink at 400,000 CAD.

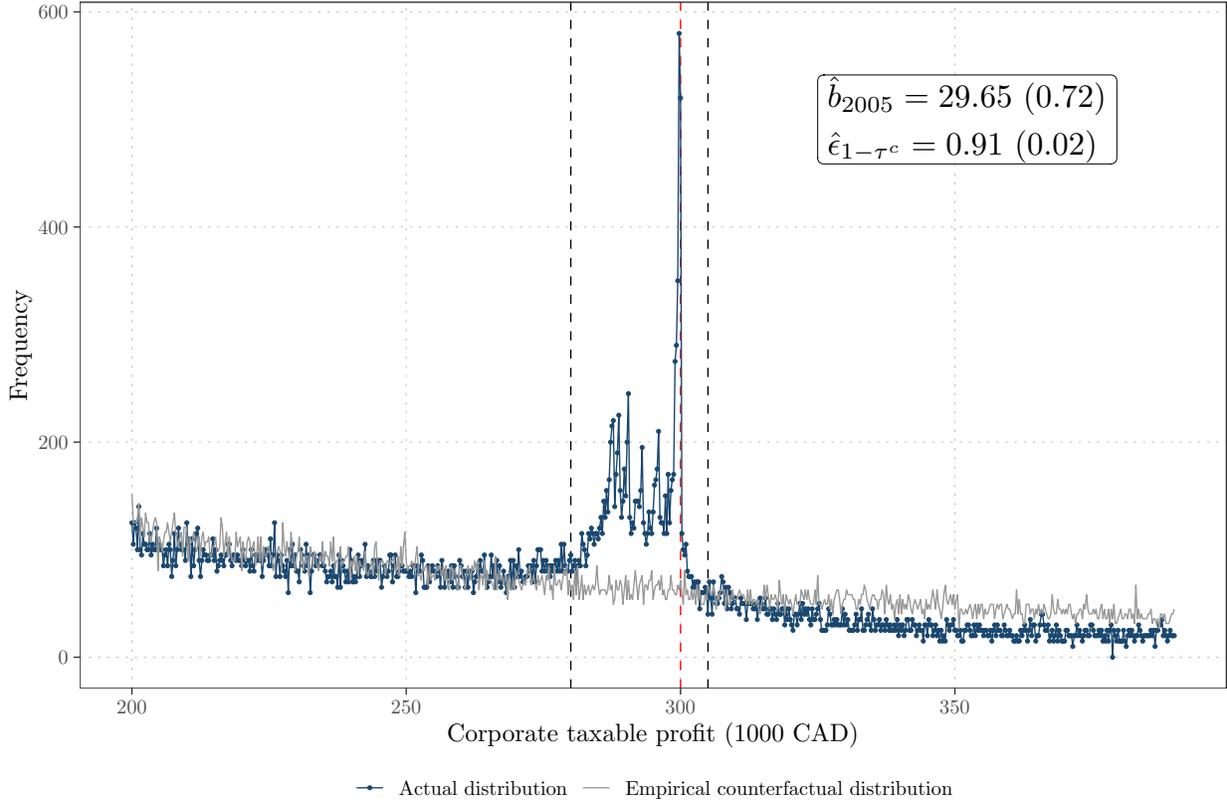
observed counts stem from the same underlying distribution.

### 4.3 Baseline results

Given that we cannot rule out the stationarity of the counterfactual density, we apply the methodology described in the previous section to estimate the excess bunching for Canada during 2005 and 2006. First, we define bins of \$250. Second, by inspection, we set  $z_l = \$280,000$  and  $z_u = \$305,000$  for 2005 and  $z_l = 280,000$  and  $z_u = \$330,000$  for 2006. We then estimate the counterfactual distribution by following the procedure described above. Figure 4 shows the observed and counterfactual densities around \$300,000 for 2005. The dashed vertical black lines demarcate excluded income ranges, while the dashed vertical red line represents the kink found at \$300,000. The blue points plot the observed number of firms in each bin, while the grey curve shows the counterfactual distribution based on the 2010 distribution using firms with taxable income between \$200,000 and \$390,000.

There are several notable observations from the figure. First, there is a large and sharp bunched mass around \$300,000. The relative excess mass,  $b_{2005} = \frac{B_{2005}}{f(\pi^*)}$ , is estimated to be 29.65 times the density predicted by the counterfactual distribution, providing

Figure 4: Distribution of taxable income for 2005.



*Note:* This figure depicts the distribution of corporate taxable income in 2005, before the reform. Bin size is \$250. The dashed grey lines are the bunching areas and the solid red line is the empirical counterfactual distribution estimated using the methodology from [Londoño-Vélez and Ávila Mahecha \(2024\)](#).  $\hat{b}_{2005} = \frac{\hat{B}_{2005}}{\hat{f}(\pi^*)}$  represents the estimated relative excess masses in 2005.  $\hat{\epsilon}_{1-\tau^c}$  denotes the estimated elasticity of corporate taxable income with respect to the corporate net-of-tax rate. Bootstrapped standard errors are reported in parentheses.

strong evidence that firms respond to the tax structure.<sup>23</sup> Second, bunching at \$300,000 is asymmetric, as the income range clearly affected by the bunching around the kink lies between \$280,000 and \$305,000. Moreover, there is considerably more excess mass to the left of the kink than to its right. The greater mass to the left of the kink appears to reflect some degree of risk aversion, as firms may seek to avoid reporting revenues too close to the threshold by not decreasing revenues or increasing costs excessively.

The estimated relative excess mass suggests an elasticity of taxable income with respect to the corporate net-of-tax rate of 0.92 (s.e 0.02). This indicates that a 1% increase in the corporate net-of-tax rate results in a 0.91% increase in reported taxable income. These

<sup>23</sup>*b* also provides a first order approximation to the earnings response measured in 1000 CAD.

estimates are statistically significant at the conventional 95% confidence level and align with recent findings on the elasticity of taxable income with respect to the corporate tax rate. Specifically, [Boonzaaier et al. \(2019\)](#) estimates an elasticity of 0.7 at a lower kink for small firms in South Africa, while [Lediga et al. \(2019\)](#) reports similar results for South African firms. Notably, these elasticities are three to four times higher than those estimated by [Devereux et al. \(2014\)](#) for the UK, which may be explained by differences in tax environments across countries.

Next, we examine how bunching was affected by the 2006 reform. Figure 5 presents the observed and counterfactual densities around \$300,000 for 2006. The excluded income range is again demarcated by the dashed vertical black lines, while the counterfactual density is estimated using the distribution of taxable income between \$200,000 and \$400,000 in 2010.

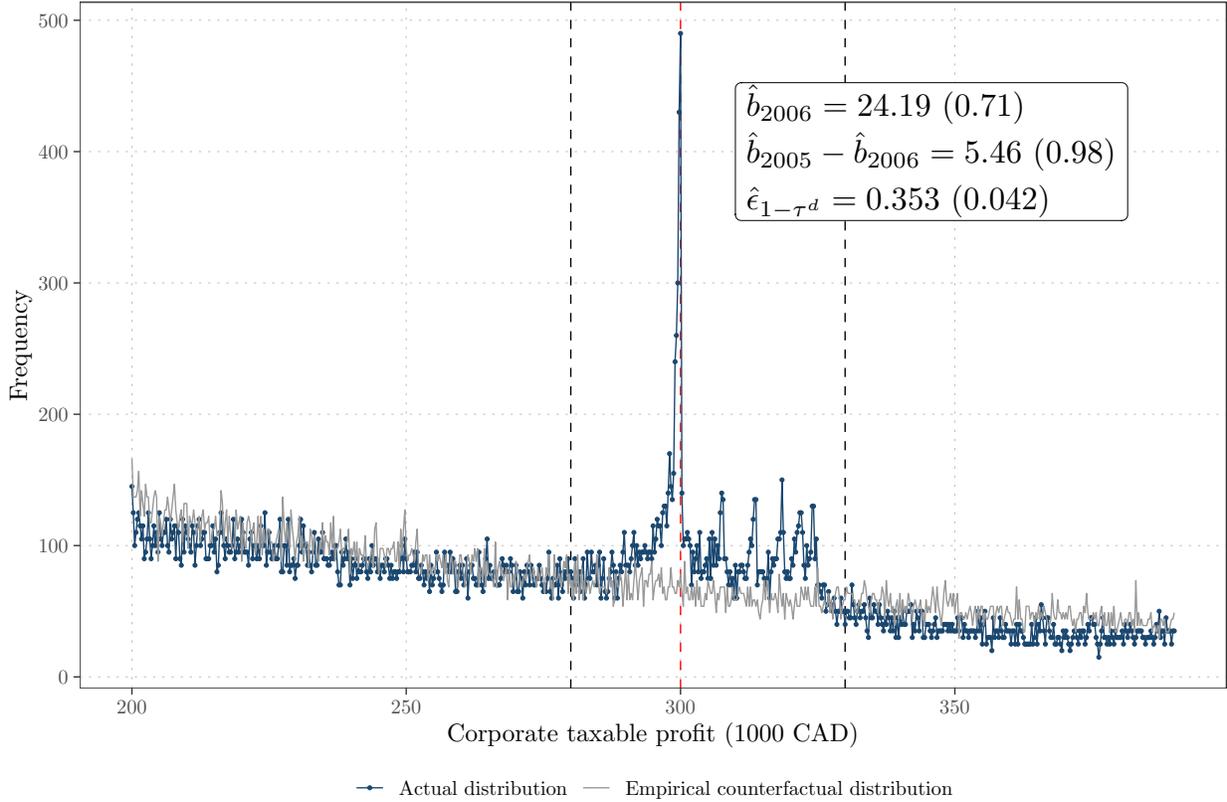
A few comparisons relative to the figure for 2005 are worth noting. First there is sharp bunching around \$300,000, though less than in 2005. Moreover, although the bunching is still asymmetric, where the bunching window is between \$280,000 and 330,000 now it is more pronounced to the right of the threshold point, which is evidence that there is a shift to the right of the distribution. Also, the relative excess mass  $b_{2006}$  is 24.19 times the density predicted by the counterfactual distribution which is close to a 80% of the relative mass excess found in 2005. This provides evidence that in 2006, firms responded less strongly to the tax structure than in 2005.

The difference in relative bunching between 2005 and 2006 is estimated at 5.461. This decrease in bunching implies that the elasticity of taxable income with respect to  $1 - \tau_d$  is estimated at 0.353 (s.e 0.042). This elasticity, which is statistically significant at the 95% level, suggests that a 1% increase in one minus the dividend tax produces a 0.353% increase in reported taxable income.

#### 4.4 Contrast with previous corporate ECTI estimates for Canada

We identify two previous studies that estimate ECTI for Canada. First, [Lesica \(2025b\)](#) estimate the corporate ECTI between 2001 and 2019 using the polynomial method to estimate the counterfactual corporate taxable income distribution, reporting elasticities of 0.24 for 2005 and 0.18 for 2006. As we discuss in this paper, the 2006 estimate incorporates two kinks, the corporate tax kink and the dividend tax kink, which generate opposing

Figure 5: Distribution of taxable income for 2006.



Note: This figure depicts the distribution of corporate taxable income in 2006, after the reform. Bin size is \$250. The dashed grey lines are the bunching areas and the solid red line is the empirical counterfactual distribution estimated using the methodology from [Londoño-Vélez and Ávila Mahecha \(2024\)](#).  $\hat{b}_{2005} = \frac{\hat{B}_{2005}}{\hat{f}(\pi^*)}$  and  $\hat{b}_{2006} = \frac{\hat{B}_{2006}}{\hat{f}(\pi^*)}$  represent the estimated relative excess masses in 2005 and 2006, respectively.  $\hat{\epsilon}_{1-\tau^d}$  denotes the estimated elasticity of corporate taxable income with respect to the dividend net-of-tax rate. Bootstrapped standard errors are reported in parentheses.

economic incentives. This may account for the lower ECTI observed in that year. It is also important to note that [Lesica \(2025b\)](#) use statutory corporate tax rates of 0.186 and 0.342. However, these rates apply only for taxable income above the provincial small business deduction thresholds, which activates at either 350,000 or 400,000 CAD depending on the province. Since we focus exclusively on the federal threshold, we use tax rates of 0.186 and 0.2762, where the latter reflects the sum of the general federal corporate rate (0.2212) and the provincial rate (0.055) applicable between the federal and provincial thresholds. Using a seventh-degree polynomial and the tax rates from [Lesica \(2025b\)](#), we estimate a corporate ECTI of 0.28 and 0.223 for 2005 and 2006, respectively.

In a previous study, [Bernier and Perrault \(2023\)](#) estimate corporate ECTIs for various

Canadian provinces between 2009 and 2020. They employ the method proposed by [Bertanha et al. \(2023\)](#), which involves applying the previously discussed filtering procedure, and reframing the bunching design as a censored regression model. Concretely, they use a mid-censored Tobit model to identify the elasticity using data truncated in an interval around the kink point, estimating an ECTI of 0.87 for Ontario.<sup>24</sup> Overall, the findings of [Bernier and Perrault \(2023\)](#) are consistent with our corporate ECTI estimates.

## 4.5 Robustness checks

Finally, in the Appendix, we conduct a series of sensitivity tests and validity checks that confirm the robustness of our results. First, we re-estimate the parameters using as counterfactual the empirical distributions of each year in the 2010-2016 period. Second, we evaluate the sensitivity of our estimates to different choices of bunching windows. Third, we re-estimate elasticities using the traditional polynomial strategy from [Chetty et al. \(2011\)](#). Fourth, to address the presence of diffuse bunching — left of the kink in 2005 and right of it in 2006 — we implement the filtering procedure proposed by [Bertanha et al. \(2023\)](#) to recover the underlying distribution of taxable income, net of optimization frictions, and recompute our estimates. Finally, we implement recent partial identification strategies that relax both our counterfactual stationarity and the homogeneity of the effect in logs assumptions, in line with [Bertanha et al. \(2023\)](#) and [Goff \(2024\)](#). Notably, across all exercises, our results remain robust both quantitatively and qualitatively.

## 5 Welfare analysis of corporate-personal tax integration

Tax integration is rooted in the principle of horizontal equity, which holds that income earned from different sources should face the same overall tax burden. In the context of corporate finance, this principle implies that income generated within a corporation and subsequently distributed to shareholders should be taxed equivalently to income earned directly by individuals. A fully integrated tax system therefore aligns corporate and shareholder-level taxes so that the combined tax burden on distributed corporate profits

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<sup>24</sup>[Bernier and Perrault \(2023\)](#) reports that this elasticity ranges from 0.26 in New Brunswick to 1.43 in Alberta, with a median elasticity of 0.79 for CCPCs at the \$500,000 kink during the years 2010-2017.

equals the marginal personal income tax rate. This condition can be expressed as

$$(1 - \tau^c)(1 - \tau^d) = (1 - \tau^p), \quad (2)$$

where  $\tau^c$  is the corporate tax rate,  $\tau^d$  the dividend tax rate, and  $\tau^p$  the personal tax rate. Equation 2 illustrates that taxing a unit of profit at the corporate level and then again upon distribution should be equivalent to taxing that same unit at the personal level (Smart, 2017). This approach reflects an international trend toward mitigating the "double taxation" of corporate income. Numerous jurisdictions have implemented integration mechanisms—ranging from full imputation systems in Australia and New Zealand to targeted reforms in "classic" systems like the United States—to reduce the tax wedge between equity and personal income.<sup>25</sup> By aligning these rates, policymakers aim to promote neutrality and reduce the distortionary effects of corporate taxation. Theoretically, these reforms improve economic efficiency through four primary channels: (i) increasing investment by lowering the cost of capital; (ii) improving capital allocation across corporate and non-corporate sectors; (iii) encouraging a more balanced debt-equity capital structure; and (iv) reducing the tax penalty on dividends, which facilitates the reallocation of capital toward more productive ventures (Hubbard, 1993, 2005; Smart, 2021; Smith and Miller, 2025).<sup>26</sup>

Importantly, Equation 2 implies that modifying the dividend tax is not the only path to integration; the same objective can be achieved by reducing the corporate tax rate. In the following subsection, we employ the Marginal Value of Public Funds (MVPF) framework to evaluate whether a reduction in  $\tau^c$  or  $\tau^d$  constitutes a more desirable policy instrument for achieving a higher degree of integration.

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<sup>25</sup>See OECD (2007) for a review of mechanisms in different OECD countries. In the U.S., the 1992 Treasury report laid the groundwork for the 2003 Bush tax cuts, which reduced the top dividend rate from 38.6% to 15% to address these distortions (Burman et al., 2017; U.S. Department of the Treasury, 1992). Canada utilizes a "gross-up and credit" system, where credits are granted to shareholders to offset corporate taxes paid (Smart, 2017).

<sup>26</sup>Notice that an increase in integration between corporate and dividend taxes reduces the tax advantage of organizing as a pass-through by lowering the combined tax burden on distributed corporate income. In this sense, greater integration makes payouts from C-corporations more comparable to income earned in pass-through entities, such as S-corporations in the United States. However, even under full integration, an important distinction remains: retained earnings are taxed differently across organizational forms. In pass-through entities, retained income is typically taxed immediately at the owners personal tax rate, whereas in C-corporations retained earnings are taxed at the corporate rate and only face shareholder-level taxation upon distribution. As a result, tax integration primarily affects incentives at the payout margin, while organizational-form choices may continue to respond to differences in the taxation of retained earnings.

## 5.1 Baseline MVPF analysis

To evaluate the welfare implications of increasing corporate–dividend tax integration, we use the MVPF framework (Hendren and Sprung-Keyser, 2020). The MVPF is a benefit–cost ratio in which the numerator reflects the willingness to pay of agents affected by the reform, while the denominator combines the mechanical fiscal cost with the induced changes in tax revenues arising from behavioral responses. These induced revenue changes constitute the fiscal externalities generated by the policy. Formally, the MVPF of a policy  $j$  is given by

$$MVPF^j = \frac{\sum_i WTP_i^j}{G^j},$$

where  $WTP_i^j$  represents the willingness to pay of individual  $i$  for policy  $j$  and  $G^j$  is the net cost to the government. The MVPF depends on the Fiscal Externality ( $FE$ ) of each instrument:

$$MVPF^j = \frac{1}{1 + FE^j}$$

where the fiscal externality summarizes the endogenous change in government revenues induced by behavioral responses to the policy, expressed per dollar of mechanical revenue cost. Intuitively, the fiscal externality captures how much of the initial budgetary cost of a tax cut is offset or amplified by changes in economic behavior that affect the tax base.<sup>27</sup>

In our setting, we are interested in comparing the desirability of two policies aimed at reducing double taxation of corporate income: (i) a decrease in corporate taxes and (ii) a dividend tax cut. Comparing these two policies amounts to comparing their respective MVPFs, with reduction in corporate taxes being preferred to a dividend tax cut whenever

$$\bar{\eta}^c MVPF^c > \bar{\eta}^d MVPF^d,$$

where  $MVPF^c$  and  $MVPF^d$  denote the MVPFs of a corporate tax cut and a dividend tax cut, respectively, and  $\bar{\eta}^j$  represents the average social marginal utility of the beneficiaries of each policy. Because both policies target the same group of individuals, we can abstract from these average weights and directly compare the MVPFs of both policies, i.e.,  $\bar{\eta}^c \approx \bar{\eta}^d$ . Since weights cancel, we can obtain conditions for indifference between both policies

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<sup>27</sup>A negative fiscal externality arises when the policy expands taxable bases elsewhere or in the same base, partially recouping lost revenue (for example, through higher reported profits, dividends, wages, or capital gains). In this case, the denominator is smaller, raising the MVPF and making the policy more fiscally efficient. Conversely, a positive fiscal externality reflects behavioral responses that erode the tax base and exacerbate revenue losses, increasing the net fiscal cost and lowering the MVPF.

by setting  $MVPF^c = MVPF^d$ . Then, ignoring avoidance (or reporting) responses, the relevant MVPFs are given by

$$MVPF^c = \frac{1}{1 - \underbrace{\frac{\tau^c}{1 - \tau^c} \epsilon_{1-\tau^c}^c - \frac{\tau^d}{1 - \tau^c} \frac{D}{\pi} \epsilon_{1-\tau^c}^d}_{FE^c}}, \quad MVPF^d = \frac{1}{1 - \underbrace{\frac{\tau^d}{1 - \tau^d} \epsilon_{1-\tau^d}^d - \frac{\tau^c}{1 - \tau^d} \frac{\pi}{D} \epsilon_{1-\tau^d}^c}_{FE^d}}$$

where  $\epsilon_{1-\tau^k}^\ell$ , with  $k, \ell = \{c, d\}$  is the elasticity of the the tax base  $\ell$  with respect to the tax instrument  $k$ ; and  $D$  and  $\pi$  are the dividend and corporate tax bases. Comparing with the traditional MVPF elasticity formulas presented in [Hendren and Sprung-Keyser \(2020\)](#) and [Bastani \(2025\)](#) is that changes in one tax instrument also affect the other tax base, generating additional fiscal externalities that must be accounted for when evaluating corporate–dividend tax integration. Those cross effects are represented by  $\epsilon_{1-\tau^d}^c$ , the elasticity of corporate taxable income with respect to the dividend net-of-tax rate, and  $\epsilon_{1-\tau^c}^d$ , the elasticity of dividends payouts with respect to the corporate net-of-tax rate.<sup>28</sup>

Using these formulas together with our estimated elasticities, we characterize the condition under which the two policies yield equal welfare, thereby defining a locus that separates the regions where each policy is preferred. We set  $\epsilon_{1-\tau^c}^c = 0.91$  and  $\epsilon_{1-\tau^d}^c = 0.353$  based on our baseline estimates, and take  $\tau_c = 0.2762$  and  $\tau_d = 0.3057$  as the relevant marginal tax rates in the top bracket prior to the 2006 reform. We further set  $\epsilon_{1-\tau^c}^d = 0$ , consistent with [Duan and Moon \(2024a\)](#), who document a null effect of a corporate tax cut on dividend payments among CCPCs in Quebec.<sup>29</sup>

Conditional on these values, we evaluate the relative desirability of each tax cut over alternative values of the dividend-to-corporate tax base ratio and the dividend own elasticity. We treat these two parameters as free for a few reasons. First, the elasticity estimates held fixed are directly identified using CCPC data, and both  $\epsilon_{1-\tau^c}^c$  and  $\epsilon_{1-\tau^d}^c$  are broadly consistent with existing estimates in the literature, albeit obtained in different contexts. Second, to the best of our knowledge,  $\epsilon_{1-\tau^d}^d$  has not been estimated for CCPCs. We explore

<sup>28</sup>A salient feature of these cross terms is that they are rescaled by relative base sizes. Because profits typically exceed dividends, profit responses induced by dividend tax changes are mechanically scaled up by the factor  $\frac{\pi}{D}$ , while dividend responses induced by corporate tax changes are scaled down by  $\frac{D}{\pi}$ . As a result, even modest elasticities of corporate taxable income with respect to dividend taxation can translate into large revenue feedbacks, whereas dividend responses to corporate tax changes operate on a much smaller base when the ratio between  $\pi$  and  $D$  is sufficiently large.

<sup>29</sup>[Duan and Moon \(2024a\)](#) find that firm owners do not immediately cash out increased profits through higher dividends, but instead reinvest by hiring more workers and paying higher salaries; the estimated effect on distributions is statistically null.

any potential responses of dividend payouts in Figure C3 from the Appendix which uses aggregate national accounts data on dividend payments and shows that dividend payouts do not increase sharply following the reform. To explore this further, and following Smart (2018), we compare dividend payouts to residents and non-residents, since non-residents were not affected by the reform. These results suggest that dividend payouts to residents increase only modestly in 2006, although our analysis should not be taken as conclusive.<sup>30</sup> Accordingly, we allow for a wide range of values of  $\epsilon_{1-\tau^d}^d$  in our welfare analysis.

We also allow the ratio  $D/\pi$  to vary, as it is likely to change substantially across firms. As argued by Sinn (1991) and Korinek and Stiglitz (2009), young firms typically do not issue dividends, whereas mature firms may distribute a substantial share of profits.<sup>31</sup>

Figure 6 illustrates the results of our analysis by depicting the regions in the  $(D/\pi, \epsilon_{1-\tau^d}^d)$  space where a corporate tax cut or a dividend tax cut is preferred under the MVPF criterion. The solid, upward-sloping locus identifies the combinations of the dividend-to-profit ratio,  $D/\pi$ , and the dividend own elasticity,  $\epsilon_{1-\tau^d}^d$ , for which the two instruments yield equal MVPFs. To the right of this locus, a corporate tax cut dominates a dividend tax cut.

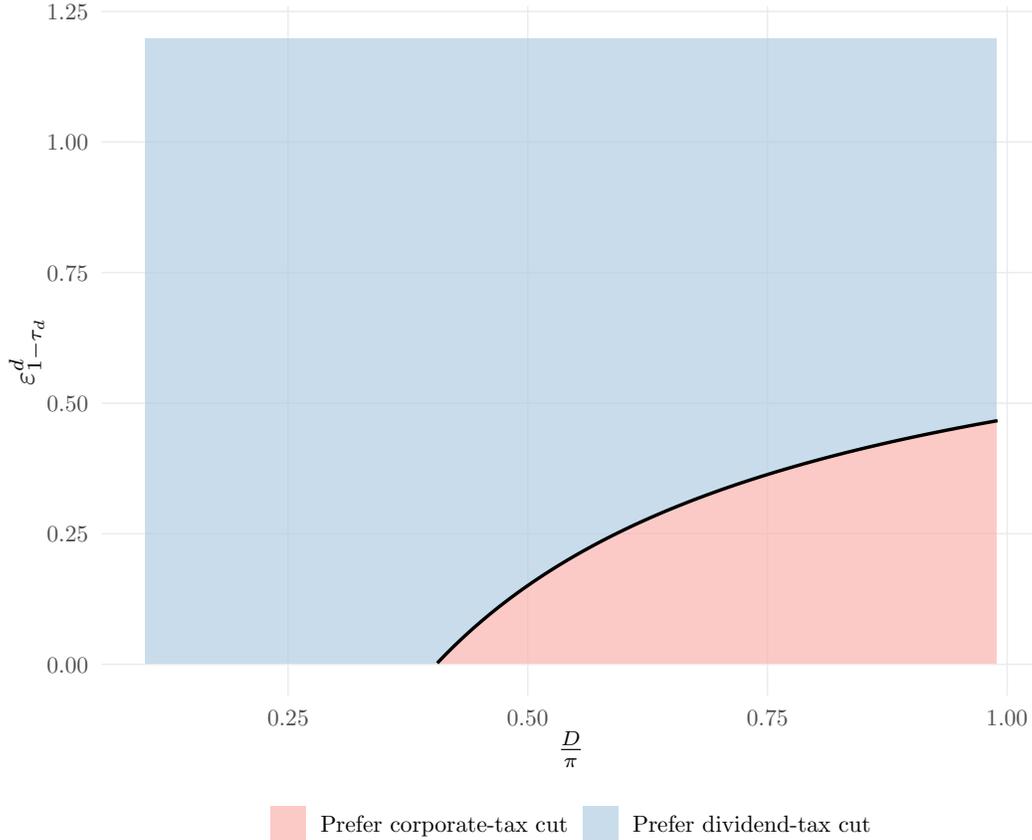
Intuitively, when dividends account for a large share of corporate profits and dividend payments respond weakly to taxation, targeting profits directly through a corporate tax cut is more fiscally efficient. By contrast, when dividends constitute a small share of profits or are highly responsive to dividend taxation, the revenue feedbacks from a dividend tax cut dominate. Accordingly, a corporate tax cut is preferred only when the dividend base is sufficiently large relative to profits and dividend payments are relatively inelastic. Conversely, when the dividend base is small or the dividend tax base is sufficiently elastic with respect to its own tax rate, a dividend tax cut is always preferred. Consistent with this logic, existing evidence from other institutional settings suggests that dividend payments are relatively elastic with respect to dividend taxation (Chetty and Saez, 2005; Matray, 2022).

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<sup>30</sup>These findings are consistent with Smart (2018), who also find, using microdata, that the increase in dividends following the 2006 tax reform was not immediate.

<sup>31</sup>As documented by Smart (2018), fewer than 5% of Canadian firms pay dividends. This heterogeneity along both the intensive and extensive margins is consistent with the evidence in Yagan (2015) and Ohrn and Seegert (2019) for the United States.

Figure 6: Dividend-tax vs corporate-tax cut, baseline exercise



*Note:* This figure plots the regions of the parameter space in which a corporate tax cut or a dividend tax cut yields a higher marginal value of public funds (MVPF). The horizontal axis reports the dividend-to-profit tax base ratio,  $D/\pi$ , and the vertical axis reports the dividend own elasticity,  $\epsilon_{1-\tau_d}^d$ . The boundary corresponds to combinations of these parameters for which  $MVPF^c = MVPF^d$ , computed using baseline elasticity estimates  $\epsilon_{1-\tau_c}^c = 0.91$  and  $\epsilon_{1-\tau_d}^c = 0.353$ , marginal tax rates  $\tau_c = 0.2762$  and  $\tau_d = 0.3057$ , and setting  $\epsilon_{1-\tau_c}^d = 0$ . Shaded areas indicate regions in which a corporate tax cut (red) or a dividend tax cut (blue) is preferred.

## 5.2 Profit shifting

### 5.2.1 Dividends reported as capital gains

A mechanism emphasized in the recent empirical literature on firm taxation is the intertemporal reallocation of income from current dividend payments to future realizations of capital gains through the accumulation of retained earnings (Bach et al., 2024; Berman and Klor, 2025; Miller et al., 2024; Moon et al., 2025). In this context, a lower dividend tax rate increases the relative attractiveness of paying dividends today rather than retaining earnings within the corporation, thereby shifting income away from future capital gains

toward current dividend distributions.

To keep the analysis tractable, we assume that the after-tax profit flow can either be distributed as dividends today or retained and paid out as capital gains  $t$  periods ahead. Under this assumption, the present discounted value of tax liabilities associated with the current taxable income can be written as

$$R = \tau^c \pi + \tau^d \phi (1 - \tau^c) \pi + \tau^g \kappa (1 - \phi) (1 - \tau^c) \pi, \quad \kappa = \left( \frac{1 + r_g}{1 + r_f} \right)^t,$$

where  $\tau^g$  denotes the capital gains tax rate,  $\phi$  is the share of after-corporate-tax profits distributed immediately as dividends, and  $\kappa$  is an exogenous present-value factor capturing deferral. Retained profits are assumed to accrue at gross rate  $(1 + r_g)$  for  $t$  periods, while future tax liabilities are discounted at gross rate  $(1 + r_f)$ .<sup>32</sup>

This representation naturally defines two additional tax bases beyond corporate profits: the contemporaneous dividend base  $D = \phi(1 - \tau^c)\pi$  and the present-value capital-gains base  $G = (1 - \phi)\kappa(1 - \tau^c)\pi$ . Allowing both bases to respond to tax changes introduces an additional margin of fiscal externalities operating through intertemporal shifting.

Consistent with the empirical evidence discussed above, we impose  $\varepsilon_{1-\tau^c}^d = 0$ , which implies that the fiscal externality of a corporate tax cut depends only on observables,

$$FE^c = \frac{\tau^c}{1 - \tau^c} \varepsilon_{1-\tau^c}^\pi + \frac{\tau^g \kappa}{1 - \tau^c} (1 + \varepsilon_{1-\tau^c}^\pi).$$

Then, because the dividend and capital-gains bases are mechanically linked through the payout share  $\phi$ , the elasticity of the gains base is not independent. Using the identities implied by  $D = \phi(1 - \tau^c)\pi$  and  $G = (1 - \phi)\kappa(1 - \tau^c)\pi$ , the response of capital gains to dividend taxation can be written as

$$\varepsilon_{1-\tau^d}^g = \frac{1}{1 - \phi} \varepsilon_{1-\tau^d}^\pi - \frac{\phi}{1 - \phi} \varepsilon_{1-\tau^d}^d.$$

Substituting the expression for  $\varepsilon_{1-\tau^d}^g$  into  $FE^d$  yields a dividend-tax fiscal externality that

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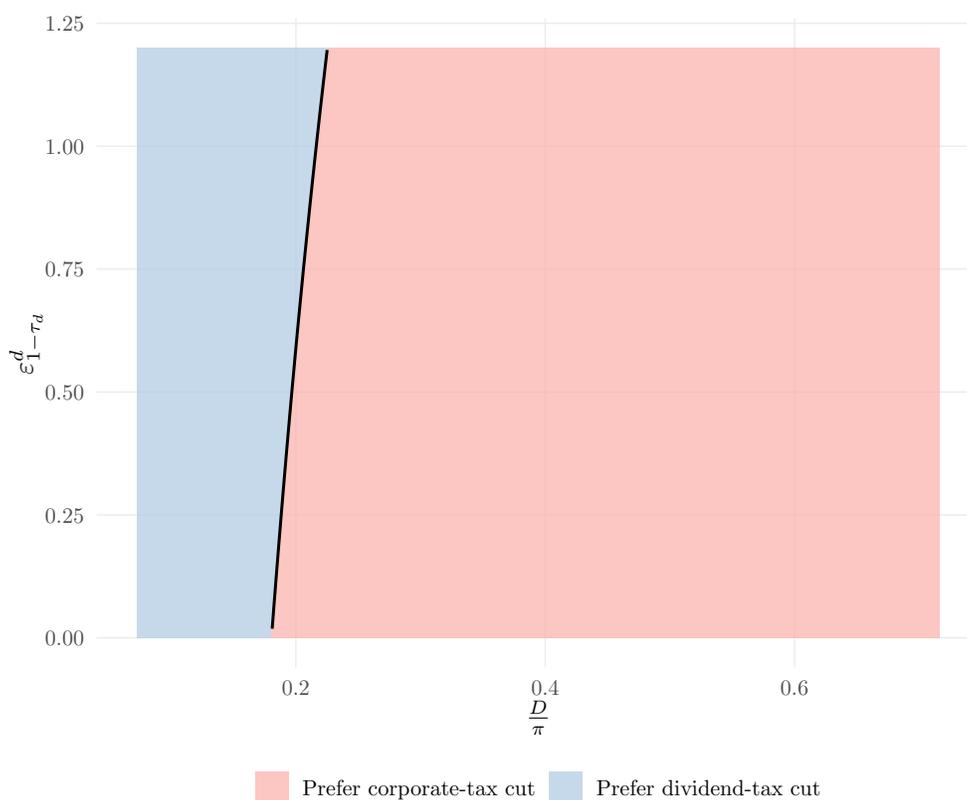
<sup>32</sup>In some cases,  $r_g$  can be equal to 0 in real terms. For example, [Miller et al. \(2024\)](#) for U.K. shows that the intertemporal income shifting induced by higher personal taxes does not imply more investment. That is, the return to those profits retained inside the firm is not materialized into a higher return.

depends on the dividend own elasticity, the profit elasticity, and the payout share  $\phi$ ,

$$FE^d = \frac{1}{1 - \tau^d} \left[ \tau^d \varepsilon_{1-\tau^d}^d + \frac{\tau^c}{\phi} \varepsilon_{1-\tau^d}^\pi + \tau^g \kappa \left( \frac{1 - \phi}{\phi} \varepsilon_{1-\tau^d}^\pi - \varepsilon_{1-\tau^d}^d \right) \right].$$

We can use both expression of the fiscal externality induced by reductions in the corporate and the dividend tax rate respectively. We use the same decision rule based on the MVPF. We vary the dividends to taxable income ratio  $\frac{D}{\pi}$  and the dividend own elasticity  $\varepsilon_{1-\tau^d}^d$ . Indeed, figure 7 depicts the welfare ranking between corporate and dividend tax cuts in the MVPF framework:

Figure 7: Dividend-tax vs corporate-tax cut with capital gains spillovers



*Note:* This figure replicates the baseline exercise but allows dividend taxation to affect the present-value capital-gains base through intertemporal shifting between current dividends and retained earnings. The horizontal axis reports  $D/\pi$  and the vertical axis reports  $\varepsilon_{1-\tau^d}^d$ . The boundary corresponds to  $(D/\pi, \varepsilon_{1-\tau^d}^d)$  pairs such that  $MVPF^c = MVPF^d$  under the capital-gains-shifting formulas in the text (holding fixed the same baseline elasticities and tax rates, and imposing  $\varepsilon_{1-\tau^c}^d = 0$ ). Shaded areas indicate regions in which a corporate tax cut (red) or a dividend tax cut (blue) is preferred.

Comparing Figure 6 with Figure 7, we observe that the region in which a reduction in dividend taxes is preferred to a reduction in corporate taxes becomes smaller once

the dividend-capital gains shifting mechanism is incorporated. When payout shifting is allowed, an increase in dividend taxes leads firms to defer payouts, reducing future capital gains tax revenues. As a result, the positive fiscal externality associated with a reduction in dividend taxes is attenuated, which raises the fiscal cost of such a policy relative to a reduction in the corporate tax rate

## 5.2.2 Dividends reported as owners' wage

Another shifting mechanism that has been broadly analyzed in the literature is the re-labeling of dividends and wages (Gordon and Slemrod, 1998). After including such mechanisms, the MVPFs are given by:

$$MVPF^c = \frac{1}{1 - \underbrace{\frac{\tau^c}{1 - \tau^c} \epsilon_{1-\tau^c}^c - \frac{\tau^d}{1 - \tau^c} \frac{D}{\pi} \epsilon_{1-\tau^c}^d - \frac{\tau^p}{1 - \tau^c} \frac{W}{\pi} \epsilon_{1-\tau^c}^w}_{FE^c}}$$

$$MVPF^d = \frac{1}{1 - \underbrace{\frac{\tau^d}{1 - \tau^d} \epsilon_{1-\tau^d}^d - \frac{\tau^c}{1 - \tau^d} \frac{\pi}{D} \epsilon_{1-\tau^d}^c - \frac{\tau^p}{1 - \tau^d} \frac{W}{D} \epsilon_{1-\tau^d}^w}_{FE^d}}$$

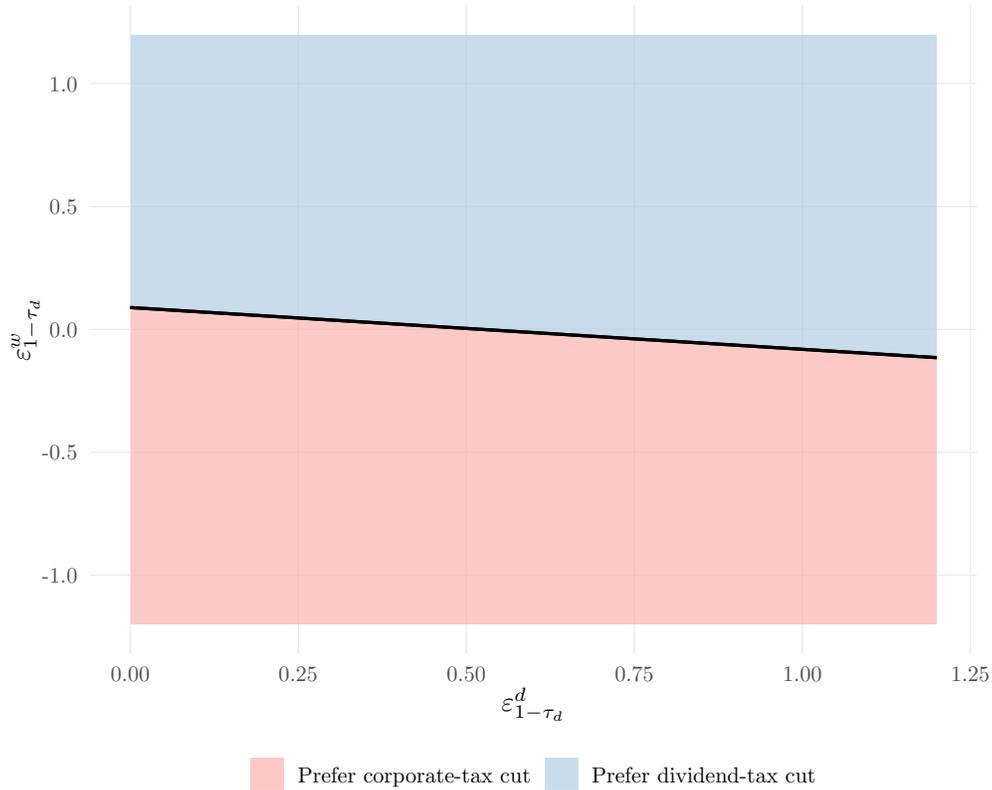
where  $W$  denotes the total wage bill and  $\epsilon_{1-\tau^j}^w$  is the elasticity of this base with respect to tax instrument  $j$ . Notice that the wage bill combines compensation paid to two distinct groups: owner-managers, who can choose the form in which income is received, and third-party employees, whose wages are determined by production and labor-demand conditions. When dividend taxes are high, owner-managers have incentives to extract income in the form of wages, which are taxed under the personal or payroll tax system. A reduction in the dividend tax weakens this incentive and leads to a re-labeling of compensation away from wages and toward dividends. This response reflects a high degree of income shifting rather than a change in labor demand or firm scale.

Under these considerations, we next compare the MVPFs of each tax cut under the previously assumed parameters, now incorporating a payroll tax rate of  $\tau^p = 0.3$ <sup>33</sup> and a wage-to-profit ratio of  $\frac{W}{\pi} = 1.8$ , as documented for CCPCS in Lesica (2025a). We further

<sup>33</sup>Table 1 reports  $\tau^p = 0.4292$ , which corresponds to the rate faced by firm owners. In our welfare exercises, however, the relevant tax rate is the effective rate on total payroll, which includes both owner and third-party wages. We therefore set  $\tau^p = 0.3$  as a rough estimate of this effective rate.

set the elasticity of wages with respect to the net-of-corporate-tax rate to  $\epsilon_{1-\tau_c}^w = 0.47$ , following the CCPC estimates in [Duan and Moon \(2024b\)](#). We then plot the regions for which the corporate or dividend tax cut is preferred as a function of both the dividend own elasticity and the elasticity of the payroll base with respect to the dividend net-of-tax rate:

Figure 8: Dividend-tax vs corporate-tax cut with wage spillovers



*Note:* This figure replicates the baseline exercise but adds wage (payroll) spillovers in the fiscal externalities, allowing the wage bill  $W$  to respond to corporate and dividend tax changes. The horizontal axis reports the dividend own elasticity,  $\epsilon_{1-\tau_d}^d$ , and the vertical axis reports the wage elasticity with respect to the dividend net-of-tax rate,  $\epsilon_{1-\tau_d}^w$ . The boundary corresponds to parameter pairs such that  $MVPF^c = MVPF^d$  under the wage-spillover formulas in the text, using  $\tau^p = 0.3$ ,  $W/\pi = 1.8$ , and  $\epsilon_{1-\tau_c}^w = 0.47$  (and the same baseline elasticities and tax rates as above). Shaded areas indicate regions in which a corporate tax cut (red) or a dividend tax cut (blue) is preferred.

Figure 8 shows that the reclassification of income has important fiscal implications in the MVPF framework. Our results indicate that when the elasticity of dividend payouts with respect to the net-of-dividend-tax rate is sufficiently large, a positive wage elasticity with respect to dividend taxes is alone sufficient to imply that a corporate tax cut dominates a dividend tax reduction. In this case, the positive fiscal externality associated with divi-

dend tax responsiveness—through higher dividend payouts, increased corporate taxable income, and higher wages—outweighs the positive fiscal externality generated by higher worker productivity following a corporate tax cut. Consequently, given our estimated elasticities, the sign of the wage elasticity can serve as a sufficient criterion for policy choice under the MVPF framework.

In this context, notice that the elasticity of the aggregate wage bill reflects a weighted average of these two margins, with weights given by their respective shares in total wages. Its sign and magnitude therefore depend both on the degree of income shifting by owner-managers and on the importance of owner wages in the overall wage bill. A negative elasticity of wages with respect to the net-of-dividend-tax rate indicates that dividend taxation primarily affects the form in which owner compensation is paid rather than real production decisions.<sup>34</sup>

Empirically, the aggregate wage bill is largely composed of compensation paid to third-party employees rather than to owner-managers. Even among small firms, owner wages account for only about 20 percent of total payroll, according to the empirical analysis documented in [Lesica \(2025b\)](#) for Canadian CCPCs. Also Lesica shows that one key bunching mechanism among CCPCs operates through the reporting of wages, indicating that wage payments are sensitive to corporate taxation. This implies that a given elasticity of wages paid to non-owner employees has roughly four times the impact on the aggregate wage elasticity as an equally sized elasticity of owner wages. In this regard, the literature documents negative cross-elasticities of wages with respect to the net-of-dividend-tax rate at the owner level. For example, [Giacobasso et al. \(2025\)](#) documents substantial income shifting between personal and corporate tax bases in Uruguay, while [Alstadsæter and Jacob \(2016\)](#) finds strong substitution between wages and dividends among firm owners with high ownership stakes. At the same time, [Bach et al. \(2024\)](#) and [Berman and Klor \(2025\)](#) document more modest wage-dividend shifting effects, concentrated among top earners.

Importantly, these owner-level responses do not necessarily translate into large aggregate

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<sup>34</sup>Meanwhile, the limited role played by the own elasticity of dividends in Figure 8 follows mechanically from the relative size of the tax bases entering the fiscal externalities. In the MVPF associated with a dividend tax cut, the wage spillover term is scaled by the ratio  $W/D$ , whereas the own dividend response enters only through the standard elasticity term scaled by  $\tau^d/(1 - \tau^d)$ . When the aggregate wage bill is large relative to dividend payouts, even modest responses of wages dominate the overall fiscal externality. As a result, when  $W > D$ , the MVPF comparison is driven primarily by wage spillovers rather than by the own elasticity of dividends, tilting the welfare ranking toward corporate tax cuts whenever income shifting through wages is quantitatively important.

wage effects. Consistent with this distinction, [Yagan \(2015\)](#) finds no aggregate wage response to dividend tax changes in the United States, while [Jacob \(2021\)](#) documents only a modest increase in wages following the 2006 dividend tax cut in Sweden. This aggregate international evidence along with our MVPF analysis indicates that dividend tax cuts are preferred to corporate tax reductions in the Canadian context.

### **5.3 When is a reduction in dividend taxes via higher integration preferred?**

Our analysis highlights a central tension in the welfare evaluation of dividend taxation. In the absence of profit shifting across tax bases — so that behavioral responses reflect real economic outcomes — the MVPF framework tends to favor dividend tax cuts as a direct and targeted instrument for reducing the double taxation of corporate income. Given our estimated cross-base elasticity, a reduction in the dividend tax generates a larger positive fiscal externality through the corporate tax base than a comparable reduction in the corporate tax rate. As a result, the net fiscal cost of a dividend tax cut is lower than that of a corporate tax cut, since the expansion of corporate taxable income induced by lower dividend taxation is not matched by an equally strong revenue feedback from reducing the corporate tax rate.

Once income shifting across time is introduced, however, dividend taxation affects not only contemporaneous dividend tax revenues but also the future capital-gains tax base through intertemporal reallocation. In this case, the fiscal externality generated by higher dividend payouts is partially offset by a reduction in future capital gains, attenuating the net fiscal benefit of dividend tax cuts and making reductions in corporate tax rates relatively more attractive.

A similar logic applies to intra-temporal income reclassification between dividends and wages. When the elasticity of dividend payouts with respect to the net-of-dividend-tax rate is sufficiently large, a positive wage elasticity with respect to dividend taxation constitutes a sufficient criterion for preferring a dividend tax cut, via tax integration, over a corporate tax reduction.<sup>35</sup> Our results imply that the Canadian dividend tax reform —

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<sup>35</sup>Our analysis abstracts from other potentially important income-reclassification margins. Recent work shows that business creation can induce households to reclassify personal consumption subject to value-added or sales taxes as firm inputs, thereby simultaneously eroding both the consumption tax base and the corporate tax base ([Leite, 2024](#)). In addition, [Massenz \(2024\)](#) shows that firms that use investment deductions that can be diverted to owner consumption respond more strongly to corporate taxation.

which reduced the effective dividend tax rate to achieve greater corporate-personal tax integration — can be rationalized as an optimal policy based on our estimated elasticities of corporate taxable income, under the additional conditions that the dividend tax base is relatively small relative to the corporate tax base and that aggregate wage responses to dividend taxation are limited.

## 6 Economic interpretation

So far, the central empirical fact of our paper is that taxable income responds strongly to changes in the net-of-tax corporate rate but weakly to changes in the net-of-tax dividend rate. This section interprets our empirical findings through the lens of the classic “old view” versus “new view” debate on dividend taxation and situates our results within the broader empirical literature that followed the 2003 U.S. dividend tax reform.

Under the old view, marginal investment is financed by new equity, so dividend taxes enter the marginal cost of capital and are predicted to affect real decisions such as investment, production, and taxable income. Under the new view, marginal investment is financed out of retained earnings, implying that dividend taxes operate primarily as a tax on inframarginal distributions and should have limited effects on firms’ marginal investment behavior.

As such, taken at face value, the rapid and sizable payout responses documented by [Chetty and Saez \(2005\)](#) are difficult to reconcile with standard formulations of either view: under the new view, permanent dividend tax changes should not affect payouts, while under the old view the speed and magnitude of the response appear too large to operate through gradual real investment adjustments. To address this tension, [Chetty and Saez \(2010\)](#) propose an agency-based framework in which dividend taxation affects managerial incentives and monitoring, generating immediate payout responses without requiring dividend taxes to distort marginal real decisions.

Nonetheless, subsequent empirical work has substantially clarified the interpretation of the 2003 reform, with the weight of the evidence pointing toward new-view behavior. In particular, [Edgerton \(2013\)](#) shows that much of the observed increase in dividends coincided with a contemporaneous surge in corporate earnings, that share repurchases grew even more rapidly than dividends, and that similar payout increases occurred among firms not directly affected by the reform, casting doubt on the extent to which dividend

tax changes drove aggregate payouts. Using administrative data, [Yagan \(2015\)](#) finds no detectable effects of the reform on investment or employee compensation, providing direct evidence that dividend taxation did not operate through the marginal cost of capital.

More recent work reconciles the remaining payout responses with the new view by emphasizing alternative margins of adjustment: [Ohrn and Seegert \(2019\)](#) show that investor-level taxes distort mergers and acquisitions rather than internal investment, while [Coles et al. \(2025\)](#) demonstrate that dividend tax reductions lead firms to substitute away from low-quality unrelated acquisitions, leaving internal investment unchanged. Taken together, these findings indicate that the behavioral responses to the 2003 dividend tax reform were concentrated in inframarginal payout and financing margins, with little evidence of effects on firms' marginal real decisions, consistent with the core predictions of the new view of dividend taxation.

In this context, Canada's tax integration system, together with the 2006 dividend tax reform, provides a novel opportunity to revisit this debate through the lens of our main empirical finding, which delivers two directly comparable elasticities estimated for the same, well-defined group of firms. In principle, firms may behave according to the old or new view in contexts outside the United States. For instance, in the United Kingdom, [Kontoghiorghes \(2024b\)](#) finds that firms increase investment following a decrease in the effective dividend tax rate implemented in 2013 for a subset of listed firms.

As a first step, we argue that agency frictions of the type emphasized by [Chetty and Saez \(2010\)](#) are unlikely to be first-order in our setting. Specifically, CCPCs are predominantly small and closely held firms, averaging approximately 21 employees in the 2005–2006 period after the corporate threshold ([Lesica, 2025a](#)). In such firms, ownership and control are typically unified, limiting the scope for managerial agency problems to drive taxable-income responses similar to [Yagan \(2015\)](#), [Alstadsæter et al. \(2017\)](#) [Bach et al. \(2024\)](#), where the bulk of the firms analyzed have fairly concentrated ownership and a low likelihood of agency issues. To complement our analysis, we present Figures [C1](#) and [C2](#), which report our estimates for firms with fewer than 10 employees. As shown, the corporate ECTI is lower than in our main sample, whereas the dividend ECTI is very similar to our baseline estimates. This evidence suggests that our results are not primarily driven by firms in which agency considerations are likely to be predominant.

Next, we argue that our positive elasticity of taxable profits with respect to the net-of-tax dividend rate is also inconsistent with pure new-view behavior where we do not expect

rises in dividend taxes or investment after a decrease in dividends when our estimated elasticities represent real responses as in [Agostini et al. \(2025\)](#). Specifically, consider a new-view firm with an abundant stock of retained earnings in a two-period model in the spirit of [Chetty and Saez \(2010\)](#), [Ohrn and Seegert \(2019\)](#), and [Coles et al. \(2025\)](#), in which the owner-manager chooses between distributions and investment out of internal funds. In this setting, the optimal investment choice  $I$  satisfies

$$(1 - \tau^d)(1 - \tau^c)f'(I) = (1 - \tau^d)r,$$

where  $f(\cdot)$  is a concave net profit function and  $r$  is the risk-free interest rate. Since the term  $(1 - \tau^d)$  cancels from both sides of the first-order condition, the optimal investment choice is invariant to the dividend tax rate, consistent with the canonical new view literature ([Auerbach, 1979](#); [Bradford, 1981](#); [King, 1977](#); [Sinn, 1991](#)). As a result, taxable profits  $\pi = f(I)$  are independent of  $\tau^d$ , implying a zero elasticity of taxable profits with respect to the net-of-tax dividend rate in the pure new-view benchmark. Therefore, in this context of real investment responses, the positive dividend elasticity we estimate cannot be rationalized by a standard new-view mechanism alone.

One possible way to reconcile our findings with the old- versus new-view framework is to allow for heterogeneity in firms financing regimes. In a heterogeneous population comprising both old-view and new-view firms, the aggregate elasticity of taxable profits with respect to the dividend tax rate reflects a weighted average of underlying responses. Firms that rely on external equity at the margin—consistent with the old view—may exhibit nonzero real responses to dividend taxation through the user cost of capital, while new-view firms remain insensitive to dividend taxes at the investment margin. In such an environment, the aggregate response to dividend taxation would be attenuated relative to the response to corporate taxation, yielding  $\epsilon_{1-\tau^c} > \epsilon_{1-\tau^d}$ , as observed in our estimates.

In this regard, we present in the Appendix a structural model in which the shares of old- and new-view firms are taken as exogenously predetermined, so that firms exhibit only real responses, as in [Agostini et al. \(2025\)](#), [Swonder and Vergara \(2025\)](#), and [Lehmann and Zanoutene \(2026\)](#). Under this assumption, together with additional assumptions on the shape of counterfactual distributions and the time invariance of primitives, the ratio  $\frac{\epsilon_{1-\tau^d}}{\epsilon_{1-\tau^c}}$  can be interpreted as the local share of new-view firms in the overlapping bunching

region.<sup>36</sup>

Another alternative explanation is that dividend taxation affects corporate taxable income through income shifting. In related work, [Lesica \(2025a\)](#) documents that CCPCs bunching at corporate tax thresholds exhibit sharp increases in owner-manager wages, consistent with active shifting out of the corporate tax base. In this setting, a positive elasticity of taxable income with respect to the net-of-tax dividend rate may reflect shifting between wages and dividends rather than real investment responses. When the tax wedge between personal income and dividend taxation narrows, firms have an incentive to reclassify compensation away from deductible owner-manager wages and toward dividends. Because dividends are paid out of after-corporate-tax profits, this reclassification mechanically raises reported taxable corporate income. In the extreme case in which firms are used primarily for tax-planning purposes, the elasticity with respect to the net-of-tax dividend rate may therefore capture avoidance behavior alone. From this perspective, our results can be rationalized by an augmented new-view framework in which corporate earnings respond through income shifting across payout margins rather than through real investment, similar in spirit to the models of [Ohrn and Seegert \(2019\)](#), [Bach et al. \(2024\)](#), and [Coles et al. \(2025\)](#), where changes in tax wedges affect payout behavior without operating through internal investment decisions.

## 7 Conclusions

This paper examines firms' behavioral responses to corporate and dividend taxes, using the 2006 Canadian dividend tax reform to estimate the elasticity of corporate taxable income (ECTI) with respect to both tax instruments. Our findings indicate that firms are substantially more responsive to corporate taxes than to dividend taxes, with an ECTI of 0.91 for the corporate net-of-tax rate and 0.353 for the dividend net-of-tax rate. These results imply that firms sensitivity to corporate tax changes is roughly two and a half times greater than their sensitivity to dividend tax changes. The elasticities estimated in this paper can also be used to assess the plausibility of theoretical results on tax distortions

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<sup>36</sup>If firm types are instead endogenous—so that firms can transition between financing regimes in response to tax incentives—then this ratio would also reflect regime switching and extensive-margin responses, rather than mapping cleanly into a time invariant population share. This interpretation is consistent with life-cycle theories of the firm, such as the one developed by [Korinek and Stiglitz \(2009\)](#), in which firms transition from externally financed to internally financed investment over time, implying that both regimes may coexist in a given cross section.

and tax integration ([Lehmann and Zanoutene, 2026](#)).

We then study the implications of our estimated elasticities for tax integration using the MVPF framework. In this setting, the net fiscal cost of a tax cut reflects both its mechanical revenue effect and the behavioral responses it induces, so a higher elasticity does not mechanically imply a higher MVPF. A corporate tax cut generates a strong own-base response, but it also entails a large mechanical revenue loss because it applies to the entire corporate tax base. By contrast, a dividend tax cut has a smaller mechanical cost and can partially finance itself through positive spillovers onto the corporate tax base, as lower dividend taxation induces an increase in corporate taxable income. In a benchmark environment without income shifting, dividend tax cuts are therefore relatively attractive when dividends are small compared with profits and dividend payouts are sufficiently elastic. Once shifting between dividends, capital gains, and owner wages is taken into account, however, this fiscal advantage is substantially attenuated: higher dividend payouts largely reflect re-timing or relabeling, so contemporaneous dividend gains are offset by weaker future capital-gains realizations and lower payroll-tax revenue.

Future research could extend this approach by estimating a broader set of cross-elasticities, in the spirit of [Giaccobasso et al. \(2025\)](#), to better compare the desirability of alternative tax policies. Finally, the Canadian institutional setting offers promising opportunities to deepen our understanding of tax avoidance and dividend taxation using matched employer-employee data, which have already been exploited in related contexts ([Duan and Moon, 2024b](#); [Lesica, 2025a](#); [Moon et al., 2025](#)). Such work would help shed further light on the salience and effectiveness of tax integration at the owner level.

Finally, this study focuses on Canadian-Controlled Private Corporations (CCPCs), which helps rule out the agency view. Extending the analysis to larger firms and multinationals would be valuable, as their tax responsiveness may differ due to international tax-planning opportunities and broader access to capital markets. Examining how firm size and cross-border considerations affect responsiveness could inform the design of more targeted tax policy.

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# Appendix

## A Identification

We describe the formal environment underpinning our identification strategy. Let  $\pi_{it}(\mathbf{x})$  denote taxable profits generated by choice vector  $\mathbf{x}$  for firm  $i$  in period  $t$ . The tax schedule faced by the firm  $i$  at time  $t$ , that features a common kink at the threshold  $\pi^*$ , can be written as

$$T_{it}(\mathbf{x}) = \max \{T_{it}(0, 0, \mathbf{x}), T_{it}(D^c, D^d, \mathbf{x})\},$$

where  $(D^c, D^d) \in \{0, 1\}^2$  indicate the presence of a corporate and dividend kink, respectively.<sup>37</sup> For example, when  $D^c = 1$ , the marginal corporate tax rate rises discretely at  $\pi^*$ , from  $\tau_0^c$  to  $\tau_1^c$ ; when  $D^d = 1$ , dividends from profits above  $\pi^*$  face a lower marginal rate, falling from  $\tau_0^d$  to  $\tau_1^d$ , hence introducing a non-convexity in the dividend schedule.<sup>38</sup>

Each observable firm  $i$  at time  $t$  is associated with a decision-maker  $d(i)$  (the owner of the firm) who solves

$$\max_{T, \mathbf{x}} u_{d(i)t}(T, \pi_{it}(\mathbf{x}), \mathbf{x}) \quad \text{s.t.} \quad T \geq T_{it}(\mathbf{x}),$$

where  $T$  is the tax liability and  $\mathbf{x}$  collects the margins along which the agent may adjust and  $u_{d(i)t}(T, \pi_{it}(\mathbf{x}), \mathbf{x})$  is the utility function of the decision maker  $d(i)$ .<sup>39</sup>

Potential outcomes are defined as counterfactual choices under alternative linear tax schedules. Let  $\pi_{it}(D^c, D^d)$  denote the value of  $\pi_{it}(\mathbf{x})$  that would be reported under the constraint  $T \geq T_{it}(D^c, D^d, \mathbf{x})$ , for  $(D^c, D^d) \in \{0, 1\}^2$ . These potential outcomes are assumed to correspond to the choices made under the relevant tax schedule,<sup>40</sup> providing the basis for our causal interpretation. Given the environment above, identification relies on three key elements: (i) convex preferences ensuring monotone responses to kinks, (ii) log-level homogeneity of treatment effects, and (iii) local stationarity of the counterfactual income distribution:

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<sup>37</sup>The observed tax schedule is the upper envelope of a low-slope regime below  $\pi^*$  and a high-slope regime above it.

<sup>38</sup>Notice that the overall tax-on-equity schedule remains convex, consistent with the observed bunching after the reform. Before the 2006 reform ( $t = 0$ ),  $(D^c, D^d) = (1, 0)$ , featuring only the corporate kink. After the reform ( $t = 1$ ),  $(D^c, D^d) = (1, 1)$ , as the dividend kink was added while the corporate kink remained unchanged.

<sup>39</sup>The mapping  $d(i)$  allows the decision-maker to differ from the observable unit, encompassing both principal-agent settings ( $d(i) \neq i$ ) and closely held firms where  $d(i) = i$ . In this case,

<sup>40</sup>Following Goff (2024), this assumption implies perfect manipulation of taxable income.

**Assumption 1** (Strict convexity).  $u_{d(i)}(T, \mathbf{x})$  is weakly decreasing in  $T$  and strictly quasi-concave in  $(T, \mathbf{x})$ .

Under this assumption, [Goff \(2024\)](#) demonstrates how we can interpret observed outcomes as truncated realization of the potential outcomes:

**Proposition 1** (Observed choices and potential outcomes under a general kink). *Under Assumption 1, the observed outcome  $\pi_{it}$  under the constraint  $T \geq \max \{T_{it}(0, 0, \mathbf{x}), T_{it}(1, D^d, \mathbf{x})\}$ , where  $D^d = \{0, 1\}$ , is given by*

$$\pi_{it} = \begin{cases} \pi_{it}(0, 0), & \text{if } \pi_{it}(0, 0) < \pi^*, \\ \pi^*, & \text{if } \pi_{it}(1, D^d) \leq \pi^* \leq \pi_{it}(0, 0), \\ \pi_{it}(1, D^d), & \text{if } \pi_{it}(1, D^d) > \pi^*. \end{cases}$$

*Proof.* See [Goff \(2024\)](#). ■

This proposition implies that the observed distribution of  $\pi_{it}$  is partially informative about the marginal distributions of the potential outcomes. Moreover, it allows us to characterize bunchers as units with “straddling” potential outcomes, i.e., those with  $\pi_{it}(1, D^d) \leq \pi^* \leq \pi_{it}(0, 0)$ . To obtain point identification, we next impose log-level homogeneity of treatment effects for bunchers.<sup>41</sup>

**Assumption 2** (Log-level homogeneity of treatment effects). *Consider units that bunch at the kink, i.e., units  $i$  such that their counterfactual profits satisfy*

$$\pi_{it}(D^c, D^d) \leq \pi^* \leq \pi_{it}(0, 0).$$

(i) *Under the corporate-kink regime  $(D^c, D^d) = (1, 0)$ , the log treatment effect on profits is homogeneous across bunching units:*

$$\Delta^c \log \pi_{it} \equiv \log \pi_{it}(0, 0) - \log \pi_{it}(1, 0) = \Delta^c \log \pi_t.$$

(ii) *Under the combined regime  $(D^c, D^d) = (1, 1)$ , the log treatment effect on profits is likewise*

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<sup>41</sup>In Section B we explore alternative assumptions which are weaker at the cost of yielding only partial identification.

homogeneous across bunching units:

$$\Delta^{cd} \log \pi_{it} \equiv \log \pi_{it}(0, 0) - \log \pi_{it}(1, 1) = \Delta^{cd} \log \pi_t.$$

This assumption is a weaker version of a standard restriction in the bunching literature. For example, the canonical isoelastic model of [Saez \(1999\)](#) implicitly imposes globally homogeneous treatment effects in logs. In contrast, our assumption requires log-homogeneity only locally among bunching units. Importantly, it allows us to express the bunching mass generated by the corporate tax kink directly as a function of the counterfactual earnings density under the low-tax linear schedule:

**Proposition 2** (Bunching and income responses). *Suppose Assumptions 1 and 2 hold. Let  $B_t^c$  denote the bunching mass at  $\pi^*$  in period  $t$  under regime  $(D^c, D^d) = (1, 0)$ , and let  $f_{0,t}$  denote the density of the baseline potential outcome  $\pi_{it}(0, 0)$ . Then,*

$$B_t^c = \int_{\pi^*}^{\pi^* + \Delta^c \pi_t^*} f_{0,t}(u) du,$$

where the marginal-buncher income response in levels is given by

$$\Delta^c \pi_t^* \equiv \pi^* (e^{\Delta^c \log \pi_t} - 1).$$

Analogously, under the combined regime  $(D^c, D^d) = (1, 1)$ , the bunching mass  $B_t^{cd}$  satisfies

$$B_t^{cd} = \int_{\pi^*}^{\pi^* + \Delta^{cd} \pi_t^*} f_{0,t}(u) du, \quad \Delta^{cd} \pi_t^* \equiv \pi^* (e^{\Delta^{cd} \log \pi_t} - 1).$$

*Proof.* From Proposition 1, an agent  $d(i)$  chooses to report  $\pi_{it} = \pi^*$  if and only if their potential outcomes straddle the threshold:

$$\pi_{it}(1, 0) \leq \pi^* \leq \pi_{it}(0, 0). \tag{3}$$

The bunching mass  $B_t^c$  is defined as the measure of agents satisfying this condition:

$$B_t^c = \Pr (\pi_{it}(1, 0) \leq \pi^* \leq \pi_{it}(0, 0)).$$

Under Assumption 2(i), the log treatment effect is constant for all units in the bunching set. This allows us to express the counterfactual taxable profit under the high-tax regime as a

function of the baseline potential outcome. In particular, since  $\log \pi_{it}(0, 0) - \log \pi_{it}(1, 0) = \Delta^c \log \pi_t$ , we get  $\pi_{it}(1, 0) = \pi_{it}(0, 0)e^{-\Delta^c \log \pi_t}$ . Substituting this expression into the straddling condition in (3) yields:

$$\pi_{it}(0, 0)e^{-\Delta^c \log \pi_t} \leq \pi^* \leq \pi_{it}(0, 0).$$

Rearranging the left inequality, we find that a unit bunches if and only if its baseline potential outcome  $\pi_{it}(0, 0)$  falls within the interval:

$$\pi^* \leq \pi_{it}(0, 0) \leq \pi^* e^{\Delta^c \log \pi_t}.$$

The mass  $B_t^c$  is therefore the integral of the density  $f_{0,t}$  over this range:

$$B_t^c = \int_{\pi^*}^{\pi^* e^{\Delta^c \log \pi_t}} f_{0,t}(u) du.$$

Define the income response of the marginal buncher in levels as:

$$\Delta^c \pi_t^* \equiv \pi^* e^{\Delta^c \log \pi_t} - \pi^* = \pi^* (e^{\Delta^c \log \pi_t} - 1).$$

Substituting the upper bound  $\pi^* + \Delta^c \pi_t^*$  into the integral completes the proof.

The proof for  $B_t^{cd}$  follows identical logic by substituting  $D^d = 1$  and applying Assumption 2(ii). The straddling condition becomes  $\pi_{it}(1, 1) \leq \pi^* \leq \pi_{it}(0, 0)$ , and the constant log-shift  $\Delta^{cd} \log \pi_t$  yields the response  $\Delta^{cd} \pi_t^* = \pi^* (e^{\Delta^{cd} \log \pi_t} - 1)$

■

Proposition 2 establishes that observed bunching can be mapped directly to the marginal distribution of the counterfactual outcome  $\pi_{it}(0, 0)$  and to the income response  $\Delta^\ell \pi_t^*$ , with  $\ell \in \{c, cd\}$ . The central empirical challenge addressed in the literature is the identification of the counterfactual distribution, which is unobserved in the presence of a kink. Standard approaches approximate this counterfactual linear-schedule density by extrapolating from empirical densities estimated away from the kink. Although, in principle, only the density to the left of the kink is informative for this purpose, empirical implementations often rely on data from both sides of the kink to improve interpolation and reduce sampling variability.

An alternative, in the spirit of [Coles et al. \(2021\)](#), [Gelber et al. \(2020\)](#), and [Londoño-Vélez and Ávila Mahecha \(2024\)](#), is to recover the counterfactual distribution from a period or group facing a globally linear low-tax schedule, thus avoiding functional-form assumptions. In our setting, while no contemporaneous control group exists, later periods feature such a linear regime, motivating the following stationarity assumption:

**Assumption 3** (Stationarity of the counterfactual distribution). *The counterfactual distribution of baseline potential outcomes under the low-tax globally linear regime is locally time-invariant. That is, there exists a density function  $f_0(u)$  such that, for every period  $t$ ,*

$$f_{0,t}(u) = f_0(u) \quad \text{for all } u \in [\pi^*, \pi^* + \bar{\Delta}],$$

where  $\bar{\Delta} \geq \Delta^c \pi_t^*$  denotes a neighborhood sufficiently large to contain the relevant income responses to the corporate kink.

This assumption simply states that the counterfactual density does not change across time in the relevant bunching windows. We provide ample evidence for a global version of this assumption in Section [B](#). With this, we are ready to state our first main identification result:

**Proposition 3** (Identification of the corporate tax response). *Suppose Assumptions [1–2](#) and [3](#) hold. Let  $s$  denote a reference period in which the corporate kink is not binding in a neighborhood of  $\pi^*$ , and let  $t = 0$  denote the year 2005 in which the corporate kink is present but no dividend kink applies. Then the causal effect of the corporate kink for corporate-bunchers in period  $t = 0$ , expressed in logs, is*

$$\Delta^c \log \pi_0 = \mathbb{E}(\log \pi_{i0}(0, 0) - \log \pi_{i0}(1, 0) \mid \pi_{i0}(0, 0) \in [\pi^*, \pi^* + \Delta^c \pi_0^*]).$$

This effect is point-identified from observed data through the bunching equation

$$B_0^c = \int_{\pi^*}^{\pi^* + \Delta^c \pi_0^*} f_{0,s}(u) du = \int_{\pi^*}^{\pi^* e^{\Delta^c \log \pi_0}} f_{0,s}(u) du, \quad \text{where } f_{0,s}(u) = f_0(u) \text{ by Assumption 3.}$$

The corresponding implied behavioral elasticity of taxable income with respect to the corporate net-of-tax rate is

$$\epsilon_{1-\tau_c} = \frac{\Delta^c \log \pi_0}{\log\left(\frac{1-\tau_{c,0}}{1-\tau_{c,1}}\right)}.$$

*Proof.* By Assumption 2(i), all units that bunch in period  $t = 0$  experience an identical log treatment effect:

$$\Delta^c \log \pi_0 = \log \pi_{i0}(0, 0) - \log \pi_{i0}(1, 0).$$

Since this is constant across all  $i$  such that  $\pi_{i0}(0, 0) \in [\pi^*, \pi^* + \Delta^c \pi_0^*]$ , the expectation of this effect over the bunching set is simply the constant itself. This establishes the first equality in the Proposition.

From Proposition 2, the observed bunching mass  $B_0^c$  is a function of the contemporaneous counterfactual density  $f_{0,0}(u)$ :

$$B_0^c = \int_{\pi^*}^{\pi^* e^{\Delta^c \log \pi_0}} f_{0,0}(u) du.$$

While  $f_{0,0}(u)$  is unobserved for  $u \in [\pi^*, \pi^* + \Delta^c \pi_0^*]$  due to the presence of the kink, Assumption 3 states that  $f_{0,t}(u)$  is time-invariant in this local neighborhood. Specifically, for the reference period  $s$  where the kink is non-binding:

$$f_{0,0}(u) = f_{0,s}(u) = f_0(u) \quad \forall u \in [\pi^*, \pi^* + \Delta^c \pi_0^*].$$

Since  $f_{0,s}(u)$  is the density of an observed distribution (as no kink exists at  $s$ ), the integral becomes:

$$B_0^c = \int_{\pi^*}^{\pi^* e^{\Delta^c \log \pi_0}} f_{0,s}(u) du.$$

Given that  $f_0(u) > 0$  and the observed  $B_0^c$  is known, this equation point-identifies the unique  $\Delta^c \log \pi_0$  that solves the equality.

Thus, we get the implied behavioral elasticity:

$$\epsilon_{1-\tau_c} = \frac{\Delta^c \log \pi_0}{\log \left( \frac{1-\tau_{c,0}}{1-\tau_{c,1}} \right)}.$$

■

Proposition 3 shows that we can use the bunching observed in 2005 and leverage a year without any kink to estimate the counterfactual density thus recovering the income response of bunchers.

Identifying the response to the dividend tax credit requires additional assumptions. In-

tuitively, bunching observed in the post-reform period reflects the combined effects of corporate and dividend taxes. To isolate the dividend-tax response, we therefore rely on a stationarity assumption for the corporate-tax effect across periods

**Assumption 4** (Invariance of the corporate effect). *The causal effect of the corporate kink is invariant across  $t \in \{0, 1\}$ , where  $t = 1$  denotes the post-reform year 2006:*

$$\Delta^c \log \pi_0 = \Delta^c \log \pi_1.$$

With this, we are ready to state our final proposition:

**Proposition 4** (Identification of the dividend tax response). *Suppose Assumptions 1–3, the log-homogeneity assumptions for the corporate and joint responses, and Assumption 4 hold. Let  $t = 0$  denote the period with a corporate kink only and  $t = 1$  the period with both corporate and dividend kinks.*

*Then the causal effect of the dividend tax for firms in the overlapping bunching region, expressed in logs, is given by*

$$\Delta^d \log \pi_1 \equiv \Delta^{cd} \log \pi_1 - \Delta^c \log \pi_0 = \mathbb{E}(\log \pi_{i1}(1, 0) - \log \pi_{i1}(1, 1) \mid \pi_{i1}(0, 0) \in [\pi^*, \pi^* + \Delta^o \pi^*]),$$

where

$$\Delta^o \pi^* \equiv \min\{\Delta^c \pi_0^*, \Delta^{cd} \pi_1^*\}$$

*denotes the maximal income range over which both the corporate and joint responses are identified.*

*Moreover,  $\Delta^d \log \pi$  is point-identified from observed data as the difference between the log effects that rationalize the bunching masses  $B_0^c$  and  $B_1^{cd}$  under the common counterfactual density  $f_0$ .*

*The implied elasticity of taxable profits with respect to the dividend net-of-tax rate is*

$$\epsilon_{1-\tau_d} = \frac{\Delta^d \log \pi_1}{\log\left(\frac{1-\tau_{d,1}}{1-\tau_{d,0}}\right)}.$$

*Proof.* By the definition of the log treatment effects in Assumption 2:

$$\Delta^c \log \pi_{i1} = \log \pi_{i1}(0, 0) - \log \pi_{i1}(1, 0)$$

$$\Delta^{cd} \log \pi_{i1} = \log \pi_{i1}(0, 0) - \log \pi_{i1}(1, 1)$$

Subtracting the corporate effect from the joint effect for a unit  $i$  in the overlapping bunching

region yields:

$$\Delta^{cd} \log \pi_{i1} - \Delta^c \log \pi_{i1} = \log \pi_{i1}(1, 0) - \log \pi_{i1}(1, 1).$$

This represents the log-change in reported profits induced by moving from a regime with only a corporate kink to one with both kinks. By the log-homogeneity assumption, this difference is constant for all  $i$  in the overlapping range  $[\pi^*, \pi^* + \Delta^o \pi^*]$ , which establishes the causal interpretation of  $\Delta^d \log \pi_1$ .

From Proposition 3, the corporate effect in the pre-reform period ( $t = 0$ ) is point-identified by solving:

$$B_0^c = \int_{\pi^*}^{\pi^* e^{\Delta^c \log \pi_0}} f_{0,s}(u) du.$$

By Assumption 4 (Invariance), we have  $\Delta^c \log \pi_1 = \Delta^c \log \pi_0$ . Similarly, the joint effect in the post-reform period ( $t = 1$ ) is point-identified by solving:

$$B_1^{cd} = \int_{\pi^*}^{\pi^* e^{\Delta^{cd} \log \pi_1}} f_{0,s}(u) du,$$

where we rely on Assumption 3 to use the same reference density  $f_{0,s}$  for both periods. Since both  $\Delta^c \log \pi_0$  and  $\Delta^{cd} \log \pi_1$  are point-identified from these equations, their difference  $\Delta^d \log \pi_1$  is also point-identified, yielding the implied behavioral elasticity:

$$\epsilon_{1-\tau_d} = \frac{\Delta^d \log \pi_1}{\log\left(\frac{1-\tau_{d,1}}{1-\tau_{d,0}}\right)}.$$

■

## B Robustness checks

We now assess the plausibility of our identifying assumptions and examine the sensitivity of our estimates to alternative empirical strategies. Specifically, we conduct a series of robustness exercises. First, we test the stationarity of the counterfactual distribution by re-estimating elasticities using different years to construct the empirical counterfactual. Second, we evaluate the robustness of our results to alternative choices of the bunching window. Third, we implement the filtering procedure proposed by [Bertanha et al. \(2023\)](#) to recover a distribution free from optimization frictions. Fourth, we revisit the traditional polynomial fitting approach to estimate the counterfactual distribution, despite its known drawbacks, to facilitate comparison with existing studies. Finally, we implement partial identification approaches that have been recently proposed to obtain identification under weaker assumptions.

### B.1 Alternative empirical counterfactuals for the corporate taxable income

We test the sensitivity of our elasticities to alternative years in the construction of the counterfactual distribution. Table [B1](#) reports the relevant estimates.

Table [B1](#) suggests that our elasticity estimates are not sensitive to the choice of year used to construct the counterfactual no-kink distribution. In particular, the elasticity of taxable income with respect to the corporate net-of-tax rate ranges from 0.871 to 0.910, while the elasticity with respect to the dividend net-of-tax rate ranges from 0.353 to 0.396.

### B.2 Sensitivity of bunching windows

We examine the sensitivity of our estimate to changes in the bunching windows. Table [B2](#) reports the relevant estimates for the elasticity of taxable income with respect to the corporate net-of-tax rate.

Two key insights can be drawn from Table [B2](#). First, variations in the upper bound of the bunching window do not appear to affect the estimated elasticity. This lack of impact is likely due to the absence of diffuse bunching on the right side of the kink, meaning that changes in the upper bound do not influence the estimation of relative density. Second,

Table B1: Estimates of the elasticities, the corporate veil index, and relative excess bunching for 2005 and 2006 under alternative counterfactual distributions..

Year	$\hat{b}_{2005}$	$\hat{b}_{2006}$	$\hat{b}_{2005} - \hat{b}_{2006}$	$\hat{\epsilon}_{1-\tau_c}$	$\hat{\epsilon}_{1-\tau_d}$
2009	29.222 (0.869)	23.149 (0.646)	6.073 (1.103)	0.878 (0.019)	0.376 (0.045)
2010	29.649 (0.702)	24.188 (0.760)	5.461 (0.987)	0.910 (0.016)	0.353 (0.047)
2011	29.414 (0.619)	23.107 (0.650)	6.308 (0.918)	0.884 (0.017)	0.375 (0.041)
2012	30.145 (0.702)	23.906 (0.662)	6.239 (0.983)	0.903 (0.018)	0.375 (0.043)
2013	29.968 (0.751)	23.448 (0.616)	6.520 (1.033)	0.903 (0.020)	0.396 (0.047)
2014	29.338 (0.692)	23.217 (0.673)	6.121 (0.900)	0.897 (0.019)	0.375 (0.043)
2015	29.411 (0.650)	22.909 (0.551)	6.503 (0.855)	0.884 (0.017)	0.375 (0.040)
2016	28.057 (0.614)	22.221 (0.604)	5.836 (0.906)	0.871 (0.016)	0.376 (0.042)

*Note:* This table shows the sensitivity of our estimates to the choice of year used to construct the counterfactual.  $\hat{b}_{2005}$  and  $\hat{b}_{2006}$  represent the estimated relative excess masses in 2005 and 2006, respectively.  $\hat{\epsilon}_{1-\tau_c}$  and  $\hat{\epsilon}_{1-\tau_d}$  denote the estimated elasticities of corporate taxable income with respect to the corporate and dividend net-of-tax rates, respectively.  $\hat{\theta}$  is the estimated corporate veil index, defined as the ratio of  $\hat{\epsilon}_{1-\tau_d}$  to  $\hat{\epsilon}_{1-\tau_c}$ . Bootstrapped standard errors are reported in parentheses. We omit the years 2007 and 2008 due to the presence of a kink at 400,000 CAD.

because most of the diffuse bunching occurs near the left side of the kink, increasing the lower bound of the bunching window results in a lower estimated elasticity. In contrast, reducing this lower bound leads to consistent elasticity estimates. Next, we examine the robustness of our estimates to changes in the 2006 bunching windows. The results are shown in Table B3.

Table B3 demonstrates that our estimation of  $\hat{\epsilon}_{1-\tau_d}$  remains robust to variations in the choice of bunching windows for the 2006 period. Notably, reducing the upper bound

Table B2: Sensitivity of  $\hat{\epsilon}_{1-\tau^c}$  to the choice of bunching window bounds in 2005

Lower bound	Upper bound				
	300	305	310	315	320
270	0.935 (0.017)	0.967 (0.016)	0.967 (0.019)	0.954 (0.017)	0.922 (0.019)
275	0.91 (0.015)	0.942 (0.02)	0.942 (0.019)	0.929 (0.02)	0.897 (0.02)
280	0.878 (0.015)	0.91 (0.019)	0.91 (0.018)	0.897 (0.019)	0.858 (0.021)
285	0.794 (0.015)	0.833 (0.016)	0.833 (0.017)	0.813 (0.02)	0.781 (0.02)
290	0.557 (0.015)	0.597 (0.014)	0.597 (0.019)	0.577 (0.019)	0.544 (0.021)

*Note:* This table reports the sensitivity of our estimates of the elasticity of corporate taxable income with respect to the dividend net-of-tax rate to alternative choices of the lower and upper bounds of the bunching window in 2006. Since the estimation of  $\hat{\epsilon}_{1-\tau^d}$  relies on bunching behavior in both 2005 and 2006, we hold the 2005 bunching window fixed at the baseline bounds and vary only the 2006 bounds. Each row corresponds to a different lower bound, and each column to a different upper bound. The matrix entries report the estimated elasticity, with bootstrapped standard errors in parentheses.

of the bunching window relative to our baseline estimation results in an increase in the estimated elasticity. This occurs because the majority of diffuse bunching in 2006 is observed to the right of the kink. Consequently, increasing the upper bound of the bunching window leads to an overstated reduction in observed bunching following the 2006 reform. Additionally, Table B3 indicates that altering the lower bound leads to a slight increase in the estimated elasticity.

Overall, these estimates show that the sign, magnitude, and statistical significance of our baseline elasticities remain robust to variations in the choice of bunching windows.

### B.3 Polynomial strategy

We now estimate the relevant elasticities using the traditional polynomial strategy first introduced by Chetty et al. (2011). This method fits a high-degree polynomial to the

Table B3: Sensitivity of  $\hat{\epsilon}_{1-\tau^d}$  to the choice of bunching window bounds in 2006

Lower bound	Upper bound				
	320	325	330	335	340
270	0.523 (0.041)	0.374 (0.038)	0.374 (0.049)	0.417 (0.041)	0.47 (0.048)
275	0.501 (0.04)	0.364 (0.047)	0.364 (0.041)	0.406 (0.038)	0.448 (0.039)
280	0.491 (0.043)	0.353 (0.044)	0.353 (0.046)	0.395 (0.048)	0.438 (0.04)
285	0.512 (0.041)	0.374 (0.041)	0.374 (0.043)	0.417 (0.044)	0.459 (0.041)
290	0.555 (0.046)	0.406 (0.041)	0.406 (0.044)	0.448 (0.044)	0.491 (0.038)

*Note:* This table reports the sensitivity of our estimates of the elasticity of corporate taxable income with respect to the dividend net-of-tax rate to alternative choices of the lower and upper bounds of the bunching window in 2006, while keeping 2005 bounds fixed at its baseline. Each row corresponds to a different lower bound, and each column to a different upper bound. The matrix entries display the estimated elasticity, with bootstrapped standard errors in parentheses.

observed income distribution, excluding a window around the kink. The width of this excluded region is chosen based on assumptions about the magnitude of optimization frictions. The fitted polynomial is then extrapolated into the excluded window to construct a counterfactual distribution, i.e., the distribution that would have prevailed in the absence of the kink-induced behavioral response. The earnings response is then identified as  $\Delta\pi = \frac{B}{f(\pi^*)}$ , which is consistent with approximating the counterfactual distribution as constant in the bunching interval.

While widely adopted, this approach has well-documented limitations. [Bertanha et al. \(2023\)](#) shows that it generally fails to recover either the true bunching mass or the correct counterfactual distribution. This failure stems from two main issues. First, taxable income is measured with error, and inferring its true distribution from noisy data requires deconvolution methods that remain underdeveloped. Second, even if the true, error-free distribution were known, the counterfactual density in the region near the kink would still be unidentified.

Further critiques arise from theoretical examples. [Bertanha et al. \(2021\)](#), in a stylized setting with uniformly distributed abilities, shows that the polynomial method can produce a perfect fit to the observed distribution and yet still yield biased estimates of the bunching mass and the counterfactual distribution. Similarly, [Blomquist et al. \(2021\)](#) argue that using high-order polynomials effectively imposes strong, untested assumptions about preferences or technology that lack empirical grounding. In light of these concerns, we view our preferred method, relying on an empirical counterfactual, as a more transparent and data-driven alternative.

Despite these concerns, we implement this method to facilitate comparison with the existing literature. We estimate the excess mass using polynomial degrees ranging from 1 to 10, and report the resulting estimates in Table [B4](#).

Table [B4](#) reveals that the estimated elasticities are quantitatively sensitive to the degree of the fitted polynomial. Specifically,  $\hat{\epsilon}_{1-\tau^c}$  ranges from 0.449 to 0.748, while  $\hat{\epsilon}_{1-\tau^d}$  varies between 0.059 and 0.320. Despite this variation, our core qualitative conclusion remains robust: the distortionary effect of corporate taxes is consistently much larger than that of dividend taxes. This pattern holds across all polynomial specifications, and is further reinforced by the broader set of robustness checks discussed in the previous sections.

Taken together, these results highlight the drawbacks of the polynomial method — already subject to well-documented theoretical critiques — but also demonstrate that our main conclusions are not driven by the choice of estimation strategy. Indeed, across all relevant exercises, our conclusions remain stable both in direction and economic significance.

## **B.4 Filtering of optimization frictions**

The original bunching estimator proposed by [Saez \(2010\)](#), along with much of the subsequent literature, was developed under the assumption of frictionless data, a setting that also underlies our main analysis. In practice, however, reported income often includes friction errors. That is, researchers observe  $\tilde{\pi} = \pi + e$ , where  $e$  is a random variable capturing optimization frictions. In our case study, this is reflected by the presence of diffuse bunching: prior to the 2006 reform, we observe excess mass to the left of the kink, which shifts to the right after the reform. This can be explained by the reduced cost of not bunching due to the increase in the corporate tax rate that can be used as a dividend tax credit. This excess credit is not lost even if the corporate taxable income taxed under

Table B4: Estimates of the relative excess bunching for 2005 and 2006 under alternative polynomial counterfactual distributions.

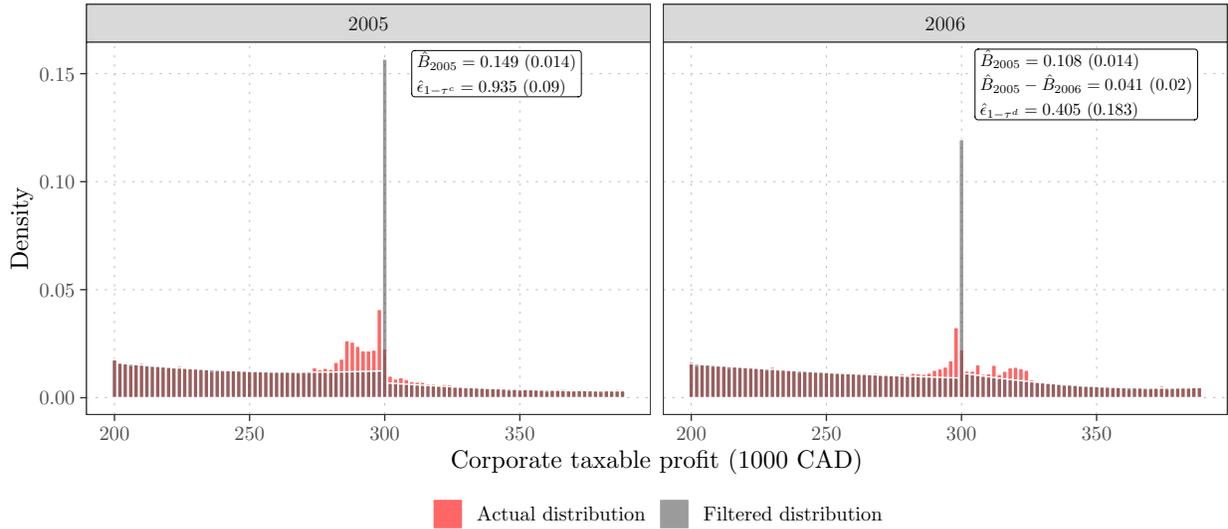
$q$	$\hat{b}_{2005}$	$\hat{b}_{2006}$	$\hat{b}_{2005} - \hat{b}_{2006}$	$\hat{\epsilon}_{1-\tau_c}$	$\hat{\epsilon}_{1-\tau_d}$
1	26.306 (0.405)	19.073 (0.401)	7.233 (0.599)	0.748 (0.012)	0.32 (0.026)
2	24.531 (0.51)	21.83 (0.714)	2.701 (0.856)	0.698 (0.015)	0.119 (0.038)
3	24.583 (0.436)	20.69 (0.646)	3.892 (0.788)	0.699 (0.012)	0.172 (0.035)
4	20.133 (0.494)	18.807 (0.926)	1.326 (1.036)	0.573 (0.014)	0.059 (0.046)
5	20.086 (0.559)	16.376 (0.906)	3.71 (1.042)	0.571 (0.016)	0.164 (0.046)
6	18.01 (0.568)	16.647 (1.041)	1.363 (1.123)	0.512 (0.016)	0.06 (0.05)
7	18.109 (0.584)	14.204 (1.316)	3.905 (1.503)	0.515 (0.017)	0.173 (0.066)
8	15.808 (0.576)	13.455 (1.325)	2.353 (1.469)	0.45 (0.016)	0.104 (0.065)
9	15.808 (0.572)	13.455 (1.48)	2.353 (1.553)	0.45 (0.016)	0.104 (0.069)
10	15.8 (0.631)	13.444 (1.768)	2.356 (1.797)	0.449 (0.018)	0.104 (0.079)

*Note:* This table shows the sensitivity of our estimates to the choice of the degree of the polynomial used to construct the counterfactual.  $\hat{b}_{2005}$  and  $\hat{b}_{2006}$  represent the estimated relative excess masses in 2005 and 2006, respectively.  $\hat{\epsilon}_{1-\tau_c}$  and  $\hat{\epsilon}_{1-\tau_d}$  denote the estimated elasticities of corporate taxable income with respect to the corporate and dividend net-of-tax rates, respectively.  $\hat{\theta}$  is the estimated corporate veil index, defined as the ratio of  $\hat{\epsilon}_{1-\tau_d}$  to  $\hat{\epsilon}_{1-\tau_c}$ . Bootstrapped standard errors are reported in parentheses.

the general rate are not paid as dividend in 2006. Indeed, as we discussed previously, all taxable income that pay the general corporate tax rate after 2001 can be accumulated under the general rate income pool (GRIP).

To address whether our results are robust to this movement of bunching mass, we apply

Figure B1: Filtered distribution of taxable income in 2005 and 2006



*Note:* This figure displays the reported and filtered distributions of taxable income. Grey bars represent the reported distribution, while red bars show the filtered distribution obtained using the method of Bertanha et al. (2023), which fits a 7th-degree polynomial to the empirical CDF, excluding observations within a 12.5% window around the kink and allowing a discontinuous shift at the kink. The friction-free CDF is derived by extrapolating the polynomial into the excluded region. The bunching mass is estimated as the difference in the share of firms at the kink under the filtered and counterfactual distributions (from 2010). Histograms are plotted using 2,000 CAD bins for visual clarity; ECDF estimates use 250 CAD bins.  $\hat{b}_{2005}$  and  $\hat{b}_{2006}$  denote the estimated excess masses;  $\hat{\epsilon}_{1-\tau^c}$ ,  $\hat{\epsilon}_{1-\tau^d}$  and  $\hat{\theta}$  denote the corporate tax elasticity, the dividend tax elasticity and the corporate veil index, respectively. Standard errors (in parentheses) are obtained via bootstrap resampling from the filtered distribution, in line with Bertanha et al. (2023).

the filtering procedure, in line with Bertanha et al. (2023), to recover the distribution of taxable profits free of friction errors. Concretely, we fit a third-degree polynomial to the empirical CDF of reported taxable income, excluding observations within a 12.5% window around the kink. Crucially, the approach allows for a discontinuous intercept shift at the kink, resulting in a jump in the fitted CDF that captures the bunching mass, consistent with predictions from a frictionless model. Moreover we allow the polynomial to be flexible in each side of the kink. This estimated CDF then serves as the basis for recovering the underlying error-free corporate income distribution,  $\pi$ . The results of this procedure are presented in Figure B1, where we also report the estimated bunching mass implied by the discontinuous jump in the filtered ECDF at the kink.

As shown in Figure B1, the filtering procedure leads to increased bunching mass at the kink. For 2005, this sharp bunching mass implies an estimated ECTI with respect to the corporate net-of-tax rate on 0.935, in line with our baseline results. For 2006, we observe

a decrease in sharp bunching, and an estimate ECTI with respect to the dividend tax rate of 0.405.

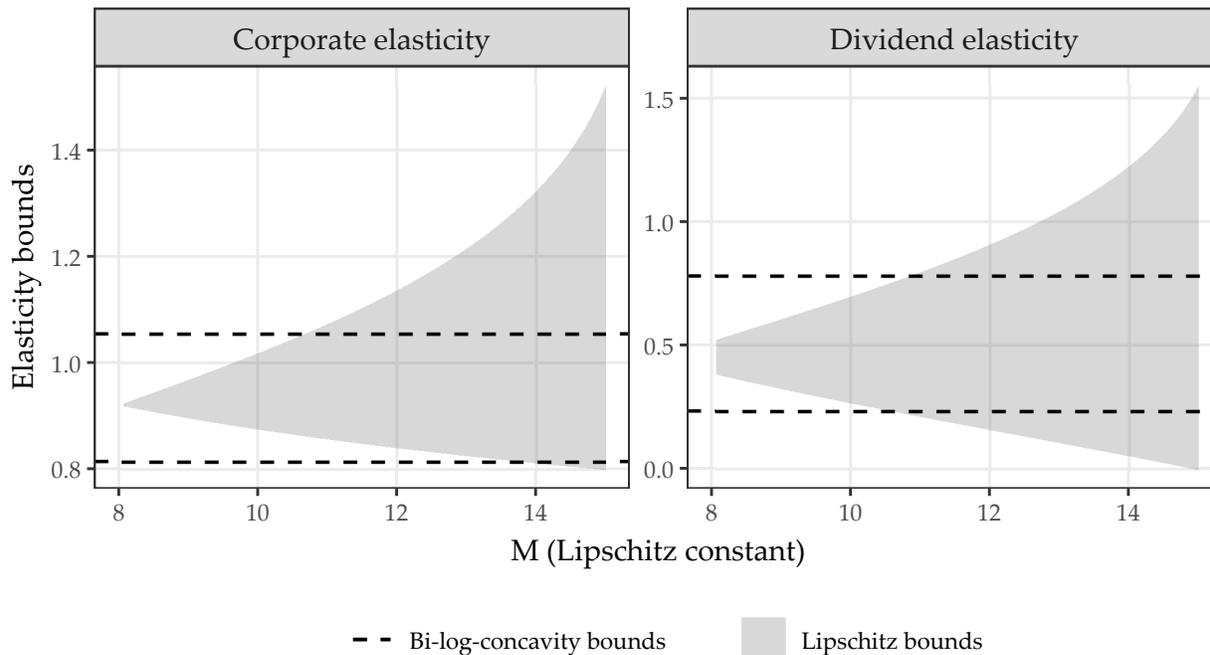
## B.5 Partial identification approaches

Our final robustness exercise implements recent partial identification approaches from the literature. In our initial specification, we operated under two fundamental assumptions. First, we assumed that the counterfactual density was stationary, thus enabling its identification from data in an alternative time period. Second, we presumed that the treatment effect was homogeneous in logarithmic terms, both of which we can relax at the cost of only obtaining set identification.

More recently, [Goff \(2024\)](#) provides tight bounds on the average income response under the assumption that both the counterfactual linear low-tax distribution of potential earnings and the counterfactual linear high-tax distribution of potential earnings belong to the class of bi-log-concave distributions. Combined with a monotonicity assumption, this approach yields bounds on the income response while relaxing the log-homogeneity and stationarity assumptions typically imposed on the counterfactual distribution. Likewise, [Bertanha et al. \(2021\)](#) obtain bounds on the elasticity of taxable income, under global log-homogeneity, under the assumption that the unobserved distribution of technology or ability is Lipschitz continuous with constant  $M > 0$ . [Figure B2](#) illustrates the results obtained from both of these methodological approaches.

[Figure B2](#) shows that both the Lipschitz continuity framework and the bi-log-concavity approach yield elasticity intervals that include our baseline corporate and dividend elasticity estimates. This alignment indicates that our core findings are not sensitive to the choice of counterfactual specification, thus affirming that the main conclusions drawn from the baseline model are stable and well-supported under weaker assumptions.

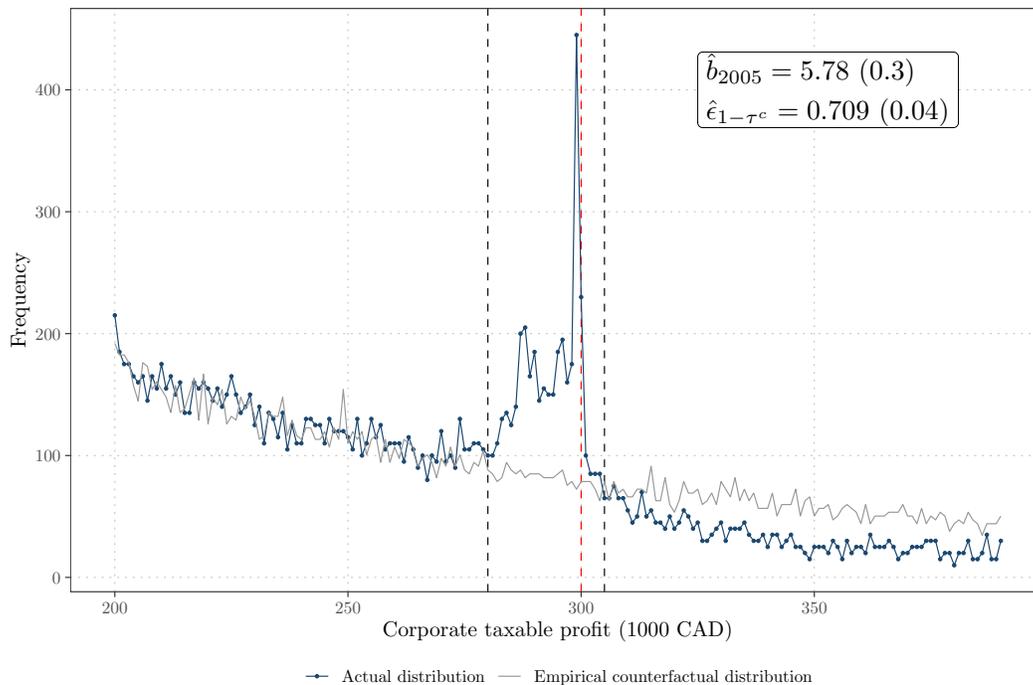
Figure B2: Elasticity bounds from partial identification approaches



*Note:* This figure presents the corporate and dividend tax elasticities bounds following the methodologies from [Bertanha et al. \(2023\)](#) and [Goff \(2024\)](#). Before applying both methodologies with apply a polynomial filtering procedure by fitting a third-degree polynomial on each side of the kink and allowing a discontinuous jump at it.

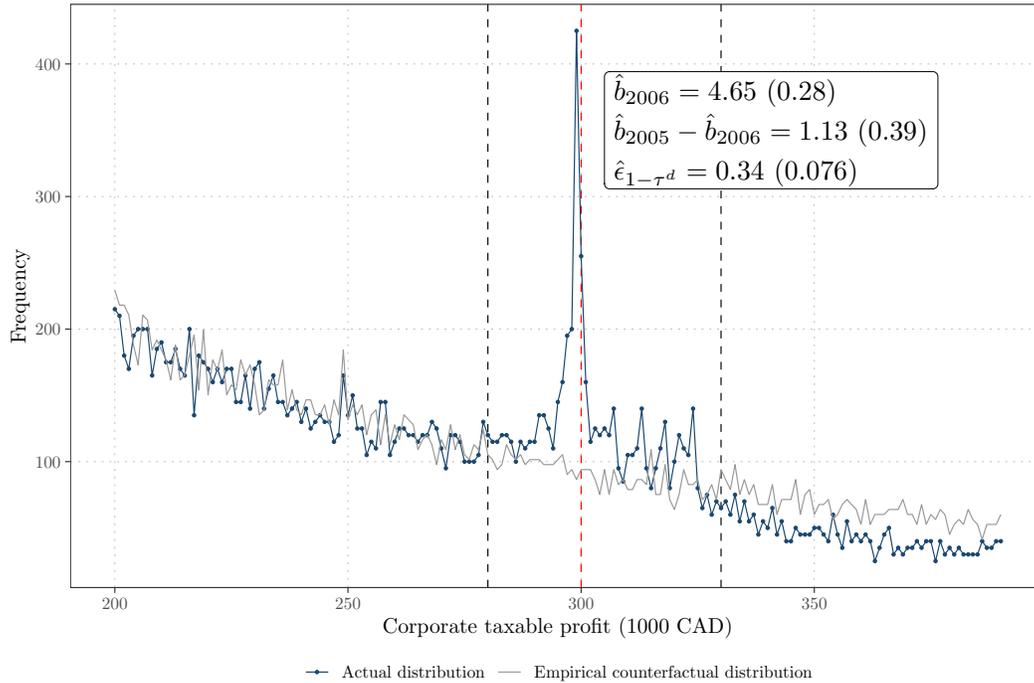
## C Additional figures

Figure C1: Distribution of taxable income for 2005 for small firms (less than 10 employees)



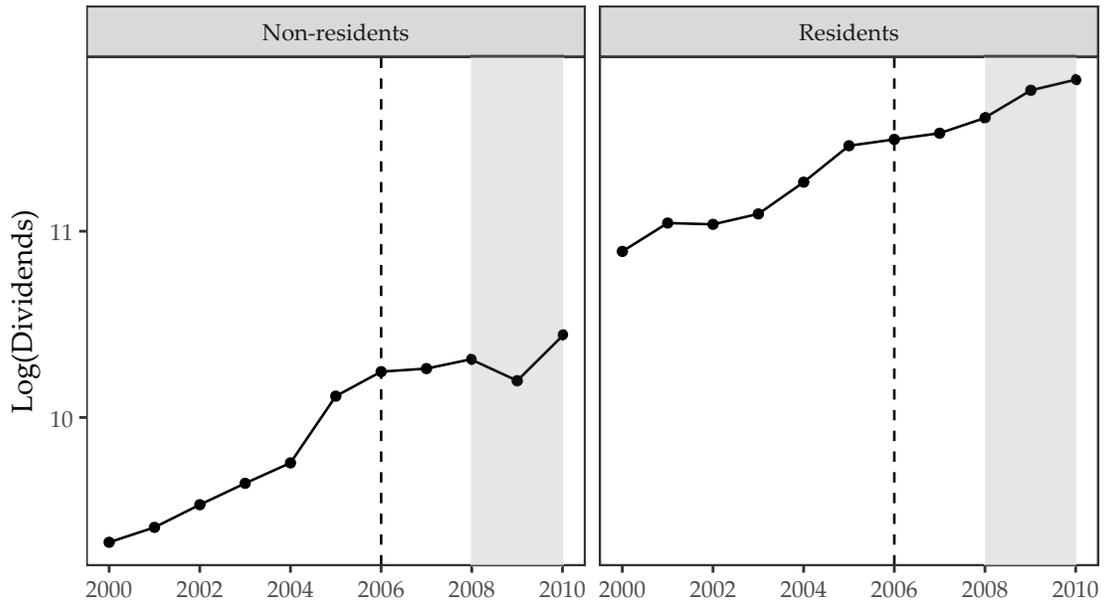
*Note:* This figure depicts the distribution of corporate taxable income in 2005 for firms with  $\leq 10$  employees, before the reform. Bin size is \$250. The dashed grey line are the bunching areas and the solid red line is the empirical counterfactual distribution estimated using the methodology from [Londoño-Vélez and Ávila Mahecha \(2024\)](#).  $\hat{b}_{2005} = \frac{\hat{B}_{2005}}{\hat{f}(\pi^*)}$  represents the estimated relative excess masses in 2005.  $\hat{\epsilon}_{1-\tau^c}$  denotes the estimated elasticity of corporate taxable income with respect to the corporate net-of-tax rate. Bootstrapped standard errors are reported in parentheses.

Figure C2: Distribution of taxable income for 2006 for small firms (less than 10 employees)



*Note:* This figure depicts the distribution of corporate taxable income in 2006 for firms with  $\leq 10$ , after the reform. Bin size is \$250. The dashed grey line are the bunching areas and the solid red line is the empirical counterfactual distribution estimated using the methodology from [Londoño-Vélez and Ávila Mahecha \(2024\)](#).  $\hat{b}_{2005} = \frac{\hat{B}_{2005}}{\hat{f}(\pi^*)}$  and  $\hat{b}_{2006} = \frac{\hat{B}_{2006}}{\hat{f}(\pi^*)}$  represent the estimated relative excess masses in 2005 and 2006, respectively.  $\hat{\epsilon}_{1-\tau^d}$  denotes the estimated elasticity of corporate taxable income with respect to the dividend net-of-tax rate. Bootstrapped standard errors are reported in parentheses.

Figure C3: Yearly dividends across time



*Note:* This figure plots the dividend payouts to resident and non-residents using Table 36-10-0117-01 from Statistics Canada, with amounts measured in 1,000,000 CAD. The x-axis represents time and the y-axis represents the logarithm of dividends.

## D A structural bunching model with exogenous firm types

### D.1 Baseline model

In the baseline model, firms begin period 0 with initial retained earnings  $X$  from past operations. They can raise additional equity  $E$  in the same period. The manager can either distribute dividends  $D$ , which are subject to a dividend tax  $\tau_d$ , or invest the remaining funds in a project that generates net profits  $f(I)$  in the following period, where investment evolves as  $I = X + E - D$ . These profits are subject to a corporate tax rate  $\tau_c$ .

In period 1, the firm closes, distributing its profits, again subject to the dividend tax, and returning the tax-exempt principal investment to shareholders. The model further assumes that investors can alternatively invest in government bonds that pay a fixed, untaxed interest rate  $r > 0$ . We abstract from potential agency problems by assuming that the manager's objective is to maximize the firm's value, which is given by

$$\max_{\{E,D\}} V = (1 - \tau_d)D - E + \frac{(1 - \tau_d)[(1 - \tau_c)f(X + E - D) + X - D] + E}{1 + r} \quad (4)$$

Finally, we assume that firms employ a isoelastic net profits function:<sup>42</sup>

$$f(I) = A \left( \frac{1 + \epsilon}{\epsilon} \right) I^{\frac{\epsilon}{\epsilon+1}} \quad (5)$$

where  $A$  is a productivity parameter, and  $\epsilon$  is a structural elasticity parameter.  $f(I)$  also corresponds to the corporate taxable income (in current value) of the firm. Given this, we define  $\pi_j \equiv f(I_j^*)$  as the optimal level of taxable income chosen by the firm, where  $j = \{n, o\}$  indexes new or old view firms.

#### New view firms

We first characterize the behavior of new view firms, which are rich in initial retained earnings:  $f'(X) < \frac{r}{1 - \tau_c}$ . First, note that if a firm issues new equity and pays dividends, it can strictly increase its value by reducing both equity issuance and distributions, thereby lowering its tax bill by  $\frac{\tau_d r}{1 + r}$ . Additionally, since the marginal after-tax return on investment

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<sup>42</sup>This assumption is standard in bunching models for firms; see, for example, [Coles et al. \(2021\)](#), [Bernier and Perrault \(2023\)](#), [Agostini et al. \(2025\)](#), and [Bertanha et al. \(2024\)](#). In general, identification in bunching models with large kinks requires functional specification.

is less than the risk-free interest rate, these firms will not issue equity ( $E = 0$ ). Instead, they will fully finance investment through internal capital, and so their optimal choice of taxable income is given by:

$$\pi_n = A^{\epsilon+1} \left( \frac{\epsilon + 1}{\epsilon} \right) \left( \frac{1}{r} \right)^\epsilon (1 - \tau_c)^\epsilon$$

This result implies the following elasticities for new view firms:

$$\epsilon_{1-\tau_c}^n = \frac{\partial \log \pi_n}{\partial \log(1 - \tau_c)} = \epsilon, \quad \epsilon_{1-\tau_d}^n = \frac{\partial \log \pi_n}{\partial \log(1 - \tau_d)} = 0$$

Thus, under the new view, dividend taxes do not affect taxable income (as they do not distort investment incentives). Corporate taxes, however, still affect taxable income.

### Old view firms

We now consider the case of old view firms, which are constrained by their initial stock of capital:  $f'(X) > \frac{r}{1-\tau_c}$ . Since the marginal after-tax return on investment exceeds the interest rate, the marginal value of paying dividends when  $E = 0$  is negative. Consequently, these firms do not pay dividends and instead issue equity to finance investment, resulting in the following choice of taxable income:

$$\pi_o = A^{\epsilon+1} \left( \frac{\epsilon + 1}{\epsilon} \right) \left( \frac{1}{r} \right)^\epsilon (1 - \tau_c)^\epsilon (1 - \tau_d)^\epsilon.$$

Thus, for old view firms both taxes distort taxable income (and investment behavior) in the same way:

$$\epsilon_{1-\tau_c}^o = \frac{\partial \log \pi_o}{\partial \log(1 - \tau_c)} = \epsilon, \quad \epsilon_{1-\tau_d}^o = \frac{\partial \log \pi_o}{\partial \log(1 - \tau_d)} = \epsilon.$$

## D.2 Model with a kink and bunching identification

Our model assumes ex-ante heterogeneity in firm behavior. Concretely, we assume a mass  $\lambda$  of firms which behave according to the old view of dividend taxation, i.e.,  $f'(I) = \frac{r}{(1-\tau_c)(1-\tau_d)}$ . The remaining  $1 - \lambda$  share of firms ignore personal taxes, in line with the new view:  $f'(I) = \frac{r}{(1-\tau_c)}$ . In this sense, our approach parallels that of [Chetty et al. \(2011\)](#), who assume ex-ante heterogeneity in worker types and similarly attribute

bunching to the (exogenous) distribution of those types. Importantly, our framework is also consistent with a fully endogenous model in which the joint distribution of productivity and retained earnings constrains regime-switching, thereby producing the same cross-sectional allocation of firm types.

Our model introduces a double kink in the tax schedule: at a threshold level of taxable income,  $\pi^*$ , the corporate tax rate increases from  $\tau_{c,0}$  to  $\tau_{c,1}$ , while the dividend tax rate simultaneously shifts from  $\tau_{d,0}$  to  $\tau_{d,1}$ . This coordinated change generates a double kink. We assume that the effective tax rate on equity remains positive, resulting in a convex kink that induces a mass of firms to bunch at  $\pi^*$ . In what follows, we present the models main results; detailed assumptions and derivations are provided in Section ?? from the Appendix.

### New view firms

We first characterize the behavior of new view firms. A well known result in the literature of nonlinear taxation is that discontinuities in marginal tax rates creates and mass of bunching agents. Thus, we find three types of firms in this scenario: (i) firms below the kink with an interior solution; (ii) firms that choose the corner solution and bunch at the kink point; and (iii) firms above the kink with an interior solution. Formally, the solution for new view firms is given by

$$\pi_n = \begin{cases} A^{\epsilon+1} \left(\frac{\epsilon+1}{\epsilon}\right) \left(\frac{1}{r}\right)^\epsilon (1 - \tau_{c,0})^\epsilon & \text{if } A < \underline{A}_n \\ \pi^* & \text{if } A \in [\underline{A}_n, \overline{A}_n] \\ A^{\epsilon+1} \left(\frac{\epsilon+1}{\epsilon}\right) \left(\frac{1}{r}\right)^\epsilon (1 - \tau_{c,1})^\epsilon & \text{if } A > \overline{A}_n \end{cases}$$

where

$$\underline{A}_n = \left( \frac{\pi^*}{\left(\frac{\epsilon+1}{\epsilon}\right) \left(\frac{1}{r}\right)^\epsilon (1 - \tau_{c,0})^\epsilon} \right)^{\frac{1}{1+\epsilon}}, \quad \overline{A}_n = \left( \frac{\pi^*}{\left(\frac{\epsilon+1}{\epsilon}\right) \left(\frac{1}{r}\right)^\epsilon (1 - \tau_{c,1})^\epsilon} \right)^{\frac{1}{1+\epsilon}}$$

Next, consider the problem of the marginal buncher across new view firm. This corresponds to the new view firm with highest productivity that bunches. Let us denote its productivity by  $A_n + \Delta A_n$  and their taxable income under the linear tax schedule by  $\pi^* + \Delta \pi_n^*$ . Thus, the relative change in taxable income for this firm under the nonlinear

and linear tax schedule will be given by

$$\frac{\Delta\pi_n^*}{\pi^*} + 1 = \left( \frac{1 - \tau_{c,0}}{1 - \tau_{c,1}} \right)^\epsilon$$

Under the assumption that  $\frac{\Delta\pi_n^*}{\pi^*}$  is small, a first-order Taylor approximation yields:

$$\frac{\Delta\pi_n^*}{\pi^*} = \epsilon \log \left( \frac{1 - \tau_{c,0}}{1 - \tau_{c,1}} \right) \quad (6)$$

Thus, for new view firms, the relative change in taxable income is given by the product of the structural elasticity  $\epsilon$  and the percentage change in corporate taxes, where dividend taxes are not relevant to the analysis.

### Old view firms

The solution for old view firms is similar, with the difference that they are responsive to dividend taxes:

$$\pi_o = \begin{cases} A^{\epsilon+1} \left( \frac{\epsilon+1}{\epsilon} \right) \left( \frac{1}{r} \right)^\epsilon (1 - \tau_{c,0})^\epsilon (1 - \tau_{d,0})^\epsilon & \text{if } A < \underline{A}_o \\ \pi^* & \text{if } A \in [\underline{A}_o, \overline{A}_o] \\ A^{\epsilon+1} \left( \frac{\epsilon+1}{\epsilon} \right) \left( \frac{1}{r} \right)^\epsilon (1 - \tau_{c,1})^\epsilon (1 - \tau_{d,1})^\epsilon & \text{if } A > \overline{A}_o \end{cases}$$

where

$$\underline{A}_o = \left( \frac{\pi^*}{\left( \frac{\epsilon+1}{\epsilon} \right) \left( \frac{1}{r} \right)^\epsilon (1 - \tau_{c,0})^\epsilon (1 - \tau_{d,0})^\epsilon} \right)^{\frac{1}{1+\epsilon}}, \quad \overline{A}_o = \left( \frac{\pi^*}{\left( \frac{\epsilon+1}{\epsilon} \right) \left( \frac{1}{r} \right)^\epsilon (1 - \tau_{c,1})^\epsilon (1 - \tau_{d,1})^\epsilon} \right)^{\frac{1}{1+\epsilon}}$$

Which in turn yields the following expression for the relative change in taxable income:

$$\frac{\Delta\pi_o^*}{\pi^*} = \epsilon \log \left( \frac{1 - \tau_{c,0}}{1 - \tau_{c,1}} \right) + \epsilon \log \left( \frac{1 - \tau_{d,0}}{1 - \tau_{d,1}} \right) = \epsilon \log \left[ \left( \frac{1 - \tau_{d,0}}{1 - \tau_{d,1}} \right) \left( \frac{1 - \tau_{c,0}}{1 - \tau_{c,1}} \right) \right]. \quad (7)$$

Given that for the old view firms  $\epsilon_{1-\tau_d}^o = \epsilon$ . Thus, for old view firms, the relative change in taxable income is given by the product of the structural elasticity and the relative change in the effective rate on equity.

## Assumptions

Let  $g_o(\pi)$  and  $g_n(\pi)$  denote the counterfactual density function of taxable profits for old and new view firms. Then, the mass of bunching new view firms and old view firms will be given by

$$B_n = \int_{\pi^*}^{\pi^* + \Delta\pi_n^*} g_n(v) dv, \quad B_o = \int_{\pi^*}^{\pi^* + \Delta\pi_o^*} g_o(v) dv \quad (8)$$

furthermore, let  $g(v)$  denote the counterfactual distribution across all firms and  $B$  be the total bunching mass composed of both firm types. Next, we discuss the assumptions needed for identification.

**Assumption 5 (Uniformity).** *The counterfactual distributions of taxable income of new view firms,  $g_n(z)$ , and of old view firms  $g_o(z)$  are both uniform around the kink:*

$$B_o = \int_{\pi^*}^{\pi^* + \Delta\pi_o^*} g_o(v) dv \approx g_o(\pi^*) \Delta\pi_o^*, \quad B_n = \int_{\pi^*}^{\pi^* + \Delta\pi_n^*} g_n(v) dv \approx g_n(\pi^*) \Delta\pi_n^* \quad (9)$$

As highlighted by [Bertanha et al. \(2023\)](#) and [Blomquist et al. \(2021\)](#), point identification of the ETI using the bunching estimator is not feasible without placing restrictions on the counterfactual income distribution. Thus, we rely on the assumption that both counterfactual distributions are uniform, as in [Chetty et al. \(2011\)](#). This assumption allows us link the bunching mass to the tax elasticities through proposition 5.

**Assumption 6 (Stationarity).** *The kink threshold  $\pi^*$  and the structural elasticity  $\epsilon$  are time invariant, while the counterfactual distributions of taxable income  $g_o(v)$  and  $g_n(v)$  are stationary.*

This assumption ensures the consistency of the system of equations and the existence of a solution. Concretely, if the structural elasticity  $\epsilon$  changes from one year to the next while the tax structure remains unchanged, the result would be an inconsistent set of equations, as two distinct bunching moments would correspond to the same weighted sum of elasticities. Crucially, this assumption can be directly tested by verifying whether the elasticity estimates remain stable across years provided that there are no changes in the tax structure.

Before introducing our final assumption, we introduce notation to distinguish between observed moments before and after the reform. Concretely, let  $B_0$  and  $B_1$  denote the observed bunching moments before and after the reform, respectively, and let  $\tau_{k,l}^0$  and  $\tau_{k,l}^1$  represent the corresponding tax rates, where  $k \in \{c, d\}$  and  $l \in \{0, 1\}$ .

**Assumption 7** (Linear independence). *The government introduces a tax reform that yields two linearly independent equations:*

$$\frac{B_0}{\pi^* g(\pi^*)} = \epsilon_{1-\tau_c} \log \left( \frac{1 - \tau_{c,0}^0}{1 - \tau_{c,1}^0} \right) + \epsilon_{1-\tau_d} \log \left( \frac{1 - \tau_{d,0}^0}{1 - \tau_{d,1}^0} \right) \quad (10)$$

$$\frac{B_1}{\pi^* g(\pi^*)} = \epsilon_{1-\tau_c} \log \left( \frac{1 - \tau_{c,0}^1}{1 - \tau_{c,1}^1} \right) + \epsilon_{1-\tau_d} \log \left( \frac{1 - \tau_{d,0}^1}{1 - \tau_{d,1}^1} \right) \quad (11)$$

This assumption is needed to obtain a unique solution to the system of linear equations. Notably, it restricts the type of tax reforms that allows us to identify the elasticities. In particular, if the government introduces a tax reform that yield a set of linearly dependent equations, then the system will be underdetermined and we will not be able to point-identify the elasticities.<sup>43</sup> This assumption allows us link the bunching mass to the tax elasticities through our first proposition:

**Proposition 5** (Bunching under double taxation). *The relative average change in taxable income  $\pi$  is given by*

$$\frac{B}{\pi^* g(\pi^*)} = \frac{\overline{\Delta\pi^*}}{\pi^*} = \epsilon_{1-\tau_c} \log \left( \frac{1 - \tau_{c,0}}{1 - \tau_{c,1}} \right) + \epsilon_{1-\tau_d} \log \left( \frac{1 - \tau_{d,0}}{1 - \tau_{d,1}} \right)$$

where  $B$  is the total share of bunching firms across all firms,  $g(v)$  is the counterfactual taxable income density of all firms,  $\overline{\Delta\pi^*}$  is the average marginal response,  $\epsilon_{1-\tau_c} \equiv \epsilon$ ,  $\epsilon_{1-\tau_d} \equiv \theta\epsilon$ , and  $\theta$  is the mass of old view firms in the overlapping bunching region which includes a mixture of both old and new view firms.

*Proof.* *Proof of Proposition 5.* Let us recall that  $\lambda$  denotes the share of old view firms. Using the law of total probability and Assumption 5 we can express total bunching as

$$B = \lambda B_o + (1 - \lambda) B_n = \lambda g_o(\pi^*) \Delta\pi_o^* + (1 - \lambda) g_n(\pi^*) \Delta\pi_n^* \quad (12)$$

Dividing by  $g(\pi^*)$  yields

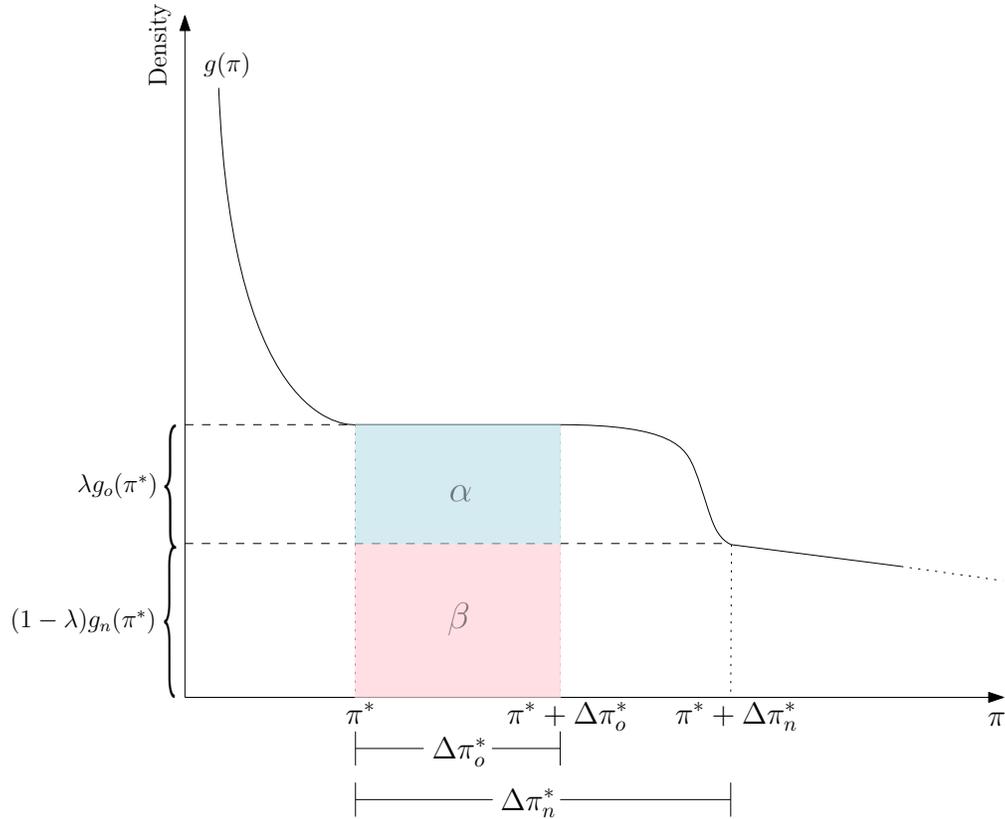
$$\frac{B}{g(\pi^*)} = \frac{\lambda g_o(\pi^*)}{g(\pi^*)} \Delta\pi_o^* + \frac{(1 - \lambda) g_n(\pi^*)}{g(\pi^*)} \Delta\pi_n^* \quad (13)$$

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<sup>43</sup>This would happen, if, for example, the government doubles the relative change in the net-of-tax rates across the kink for both tax instruments.

Using Bayes theorem, we know that  $\theta \equiv \frac{\lambda g_o(\pi^*)}{g(\pi^*)} = \Pr(\text{Old}|\pi^*)$ , while  $1 - \theta \equiv \frac{(1-\lambda)g_n(\pi^*)}{g(\pi^*)} = \Pr(\text{New}|\pi^*)$ . However, due to the uniformity of the conditional distributions, the prior parameter can be also expressed as the share of old view firms in the overlapping bunching area:  $\theta = \Pr(\text{Old}|\pi \in [\pi^*, \pi^* + \min\{\Delta\pi_o^*, \Delta\pi_n^*\}])$ , where  $\pi^* + \min\{\Delta\pi_o^*, \Delta\pi_n^*\}$  denotes the overlapping bunching region, i.e., the bunching windows that features both old and new view firms that bunch. In our context, the kinks in the corporate and dividend tax schedules are convex, and non-convex respectively, implying that  $\Delta\pi_o^* < \Delta\pi_n^*$ . To see why the previous equality in probability holds, consider the following figure, adapted to the tax system following the reform:

Figure D1: Interpretation of  $\theta$



In this scenario,  $\theta = \frac{\alpha}{\alpha+\beta}$ , i.e. the local share of firms in the  $[\pi^*, \pi^* + \Delta\pi_o^*]$  interval. Notably, this result is a direct consequence of the uniformity assumption, which ensures that the total density  $g(\pi)$  is also uniform in that area. These identities imply that the observed relative bunching reflects an average response in firm profits, in line with [Kleven \(2016\)](#):

$$\frac{B}{g(\pi^*)} = \theta\Delta\pi_o^* + (1 - \theta)\Delta\pi_n^* = \overline{\Delta\pi^*}, \quad (14)$$

which shows the first equality of Proposition 5. Next, we divide by  $\pi^*$  with the aim of relating the elasticities to the observed bunching mass:

$$\frac{B}{\pi^* g(\pi^*)} = \theta \frac{\Delta \pi_o^*}{\pi^*} + (1 - \theta) \frac{\Delta \pi_n^*}{\pi^*} \quad (15)$$

$$= \theta \epsilon \log \left[ \left( \frac{1 - \tau_{d,0}}{1 - \tau_{d,1}} \right) \left( \frac{1 - \tau_{c,0}}{1 - \tau_{c,1}} \right) \right] + (1 - \theta) \epsilon \log \left( \frac{1 - \tau_{c,0}}{1 - \tau_{c,1}} \right) \quad (16)$$

$$= \epsilon \log \left( \frac{1 - \tau_{c,0}}{1 - \tau_{c,1}} \right) + \theta \epsilon \log \left( \frac{1 - \tau_{d,0}}{1 - \tau_{d,1}} \right) \quad (17)$$

$$= \epsilon_{1-\tau_c} \log \left( \frac{1 - \tau_{c,0}}{1 - \tau_{c,1}} \right) + \epsilon_{1-\tau_d} \log \left( \frac{1 - \tau_{d,0}}{1 - \tau_{d,1}} \right) \quad (18)$$

where  $\epsilon_{1-\tau_c} \equiv \epsilon$  and  $\epsilon_{1-\tau_d} \equiv \theta \epsilon$ , which concludes the proof. ■

■

Proposition 5 extends the bunching framework of Saez (2010) and Chetty et al. (2011) to the setting of firms facing double taxation. Two key insights emerge from this result:

First, under this result,  $\epsilon_{1-\tau_c}$  equals the structural elasticity,  $\epsilon$ , while  $\epsilon_{1-\tau_d} = \theta \epsilon + (1 - \theta) \times 0$  represents a weighted average of elasticities at the kink threshold. Thus, in this setting, we obtain

$$\theta = \frac{\epsilon_{1-\tau_d}}{\epsilon_{1-\tau_c}}.$$

That is, under these assumptions, our corporate veil index is naturally reinterpreted as the share of old view firms at the overlapping bunching region, representing the local prevalence of old view firms over this window.

Second, this result sheds light on the necessary ingredients for identification. Concretely, when both the corporate and dividend tax schedules exhibit kinks, a single bunching moment is insufficient to identify both elasticities, as we are left with one equation and two unknowns. In this case, an additional bunching moment is required to estimate both parameters.<sup>44</sup>

To address this, we rely on a government tax reform that generates an additional bunching moment, yielding a second equation. Let  $B_0$  and  $B_1$  denote the observed bunching

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<sup>44</sup>Additionally, our result indicates that, if there is no kink in the dividend tax schedule, then  $\log \left( \frac{1 - \tau_{d,0}}{1 - \tau_{d,1}} \right) = 0$ . In this case, all observed bunching reflects a response to the corporate tax kink, allowing us to estimate  $\epsilon_{1-\tau_c}$  but not  $\epsilon_{1-\tau_d}$  from a single bunching moment. This is the scenario in 2005 in our case study, enabling the estimation of  $\epsilon_{1-\tau_c}$  using data from that year.

moments before and after the reform, respectively, and let  $\tau_{k,l}^0$  and  $\tau_{k,l}^1$  represent the corresponding tax rates, where  $k \in \{c, d\}$  and  $l \in \{0, 1\}$ . Intuitively, two assumptions are required for identification: (i) a time-invariance assumption, ensuring that the structural elasticity does not change between reforms, and that the productivity distribution is stationary; and (ii) that the reform induces a linearly independent system of equations, thus ensuring a unique solution. Under these assumptions, we obtain our second proposition:

**Proposition 6** (Full point-identification). *The elasticities  $\epsilon_{1-\tau_c}$  and  $\epsilon_{1-\tau_d}$  are point identified and given by:*

$$\epsilon_{1-\tau_c} = \frac{1}{\pi^*} \left( \frac{b_0 \ell_d^1 - b_1 \ell_d^0}{\ell_c^0 \ell_d^1 - \ell_d^0 \ell_c^1} \right), \quad \epsilon_{1-\tau_d} = \frac{1}{\pi^*} \left( \frac{\ell_c^0 b_1 - \ell_c^1 b_0}{\ell_c^0 \ell_d^1 - \ell_d^0 \ell_c^1} \right), \quad (19)$$

where  $b_j = \frac{B_j}{g(\pi^*)}$  for  $j \in \{0, 1\}$ , represents the relative bunching moments and  $\ell_k^j = \log \left( \frac{1-\tau_{k,0}^j}{1-\tau_{k,1}^j} \right)$  for  $j \in \{0, 1\}$  and  $k \in \{c, d\}$ , are the log differences in tax rates.

*Proof.* This results follows directly from Proposition 5, and Assumptions 6 and 7, which ensure that the system of equations has a unique solution. ■

This proposition provides a simple closed-form solution for the elasticities in terms of estimable relative bunching quantities and observed tax rates.